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ABSTRACT

A private corporation conducted a study for the United States Air Force in 1973, investigating the long term effects of drug use on general mental ability. The air force personnel selected for participation in the study were 3741 known drug users and 6772 controls. Subjects received requests to sign a form allowing their high schools to release their transcripts and test scores to the Air Force. Signed releases were forwarded to the high schools who in turn sent transcripts and test scores to the Air Force. Scores of the various general ability tests which subjects had taken in high school were converted to a standard form and compared with scores on the Airman Qualifying Examination (AQE). Results indicate little or no significant change in mental ability as a result of drug use. Such differences as did exist cannot be stated to be a function of drug use per se; the fact of drug use seems far more important than any other variable. Peer group influences on drug users and the attitudes of the drug user group toward the Air Force, and possibly toward the AQE, could have differed sufficiently from those of the control group when the subjects took the AQE to cause the slight differences in mental ability observed between the two groups. Extensive (n-46) data tables follow the body of the report. (Author/NM)

AFHRL-TR-73-60

LONG TERM EFFECTS OF DRUG USE ON GENERAL MENTAL ABILITY

By

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Life Sciences Division
San Antonio, Texas 78217

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This final report was submitted by Technology Incorporated, Life Sciences Division, 8531 N. New Braunfels Avenue, San Antonio, Texas 78217, under contract F41609-72-C-0035, project 7719, with the Personnel Research Division, Air Force Human Resources Laboratory (AFSC), Lackland Air Force Base, Texas 78236. Dr. Cecil J. Mullins, Chief, Behavioral Systems Branch, was the contract monitor.

This report has been reviewed and cleared for open publication and/or public release by the appropriate Office of Information (OI) in accordance with AFR 190-17 and DoDD 5230.9. There is no objection to unlimited distribution of this report to the public at large, or by DDC to the National Technical Information Service (NTIS).

This technical report has been reviewed and is approved.

LELAND D. BROKAW, Chief
Personnel Research Division

Approved for publication.

HAROLD E. FISCHER, Colonel, USAF
Commander

PREFACE

This report was prepared by the Life Sciences Division of Technology Incorporated. The report covers the period 15 June 1972 to 31 August 1973. The work was supported by the Air Force Human Resources Laboratory, Air Force Systems Command under Contract F41609-72-C-0035.

The assistance provided by the Contract Monitor, Dr. Cecil J. Mullins, Ph.D., during the course of the project was vital to its success and is hereby gratefully acknowledged.

TABLE OF CONTENTS

		Page
1.	Phase I: Data Collection	1
	1.1 Preparations	1
	1.2 First Subject Mailing	4
	1.3 Preparation for First School Mailing	5
	1.4 First School Mailing	6
	1.5 Subject Categorization	6
	1.6 Score Encoding	8
	1.7 Interim Report	8
2.	Phase II: Follow-Up	10
	2.1 Preparations	10
	2.2 School Follow-Up Mailing	13
	2.3 Second Subject Mailing	13
	2.4 Processing	15
3.	Phase III: Data Analysis and Reporting	16
	3.1 Literature Search	16
	3.2 Conversion to Z-Scores	16
	3.3 Production of Distribution Table	17
	3.4 Production of Magnetic Tape Data Files	18
4.	Results	20
	4.1 Response	20
	4.2 Conclusions	22
5.	Tables	24
6.	References	74
APPENDIX		76

LIST OF FIGURES

Figure	Title	Page
1.	Transcript Release Permission Form	2
2.	Phase I Cover Letter to Subjects	3
3.	Cover Letter to Schools	7
4.	Phase II Cover Letter to Subjects (Forms Not Delivered in Phase I)	11
5.	Phase II Cover Letter to Subjects (No Response in Phase I)	12
6.	Follow-Up Letter to Nonresponding Schools	14

1. Phase I: Data Collection

1.1 Preparation

On 20 July 1973, the contractor was provided a magnetic tape data file containing information on 3741 known drug users and at least one control subject for each drug user matched as closely as possible to the user on Airman Qualifying Examination General Aptitude Index, age at enlistment, year of enlistment and home of record. 3032 drug users had two control subjects and the remainder had only one. There was a total of 10,514 subjects represented on this file. At about the same time, franked envelopes for obtaining permission from the subjects for their high schools to release their records were obtained from the Control Monitor, as well as a set of gummed labels containing the subjects' names and addresses.

A four-part form was designed in which the subject could grant his permission and on which the contract monitor could record the scores obtained from the transcript. One copy of this form was provided for the subject's records; a second copy was to serve as evidence of granted permission; a third copy (in most cases, the original) was for the school's records; and a fourth, returned by the school with the transcript, identified the transcript and provided a uniform means of transcribing the scores from the transcript (See Figure (1)).

A cover letter was written to the subject to request his permission for the high school he last attended to release his records (Figure (2)).

(NAME) (SERVICE NUMBER) (DATE OF BIRTH)

Please print the name and location of the high school you attended last in the box below, then sign and date this form in the space provided. If you don't know the street address of your high school, just print the name of the school and the city and state in which it is located. Please write firmly enough so that all four copies of the form are legible. You may retain the bottom copy of this form for your records; please return the original and the first two copies to us in the return envelope.

(Name of school)
(Street address of school if known)
(City and state where school is located)

(NAME) (SERVICE NUMBER) (DATE OF BIRTH)

To the Registrar:

I hereby grant my permission for you to release a transcript of my high school record, including any and all scores obtained in general mental ability tests, to the Life Sciences Division of Technology Incorporated at San Antonio, Texas.

Signature: _____

Date Signed: _____

DO NOT WRITE IN THIS SPACE

(NAME) (SERVICE NUMBER) (DATE OF BIRTH)

Name of test: _____

Date of Administration (DDMMYY): _____

Composite Score: _____

Figure 1.

Transcript Release Permission Form

TECHNOLOGY INCORPORATED
LIFE SCIENCES DIVISION
8531 NORTH NEW BRAUNFELS AVENUE
SAN ANTONIO, TEXAS 78217
PHONE: 512/824-7373
TWX: 910/871-1150

Dear Sir:

We need your help! The Air Force has asked us to conduct a survey in which certain standard test scores are required from your high school record. This important survey is being conducted on a nationwide basis with the approval of Air Force Headquarters in Washington. The information will be used to help the Air Force make more efficient use of its personnel.

The high schools need authorization from you to release the records containing your scores to us. We have enclosed a form so that you can give them this authorization. Please complete this form today and return it to us in the enclosed self-addressed, postage-paid envelope.

No information from your transcript or from this survey will reach your personnel file. All reports resulting from this survey will be statistical summaries only and will not identify any individual persons. Any records sent to us by your school will be destroyed after the test scores have been extracted from them. The scores and all other information used in the survey will be kept STRICTLY CONFIDENTIAL.

Please do not lay this form aside. It will only take a moment for you to complete it. We need these scores from your high school as soon as possible, so please fill it out now and send it to us.

Your help and cooperation in this survey is greatly appreciated.

Sincerely,

Charles C. Stevens

Charles C. Stevens
Research Mathematician

Figure 2.

Phase I Cover Letter to Subjects

Computer programs were developed to generate a master file for the project as well as to print the subjects' names and service numbers on the permission form in the order in which the gummed labels were provided.

1.2 First Subject Mailing

The contractor's address was overprinted on the franked envelopes provided by the government as return address only on the cover envelope and as both return and mailing addresses on the return envelope. The cover letters to the subjects were printed and machine folded. The four-part permission forms were manufactured and after delivery were encoded with the subjects' names and service numbers.

There were five basic tasks involved in the actual instrument mailing preparation process: attaching the gummed label to the cover envelope, insuring that the order of the labels was not disturbed; folding the permission form by hand (machine folding was investigated but found to be impractical), also maintaining the order; preparation of the instrument by inserting a cover letter and a return envelope into a fold of the permission form; inserting the instrument into the cover envelope while checking for matching name and service number; and double checking the match and sealing the envelopes. The entire process was directly supervised by the project director who also checked approximately 90% of the envelopes in the final step. Every effort was made to ensure the highest standards of quality control.

At the end of each day, the sealed envelopes were sorted by state as requested by the branch post office, and mailed.

1.3 Preparation For First School Mailing

Concurrent with the above a cover letter to the schools was developed and printed, and cover and business reply envelopes were obtained and encoded with the contractor's address.

The extended response over time from the subjects, resulting from the staggered mailing, prompted a decision to delay preparation for the mailing to the schools until the rate of return decreased significantly. As the returns arrived, they were opened and a copy of the permission form removed as evidence of permission granted.

On 9 November 1972, a stop work order was received by the contractor. The cover letter (Figure 2) used the word "survey", and it appears that the necessary approval for a questionnaire was not granted by the cognizant Air Force agency. This resulted from a difference of definition of the word between military and civilian usage. A survey, in military parlance, apparently may be simply defined as a questionnaire, whereas in civilian parlance it may be described as a study [1]. This order was rescinded on 18 December 1972.

During this period it was necessary to continue to process the incoming returns for three reasons; first, all returns were intermixed with our regular correspondence and it was necessary to sort the mail to obtain this correspondence;

second, there were a large number of instruments returned undelivered due to invalid or incomplete addresses and the volume of these required that the contractor record the service numbers from the label and store the envelopes themselves; and third, the volume of the returns also required a like process but since the service numbers did not appear on the outside of the envelopes it was necessary to open them and remove a copy of the permission form as a record of its receipt.

The aforementioned misunderstanding about the cover letter, together with a potential increase in response rate, led to the decision by the contract monitor that all future cover letters be written by the Air Force on government letterhead.

1.4 First School Mailing

Master copies of these letters were received on 12 January 1973. The cover letters to the schools (Figure 3) were printed, folded, and inserted by machine along with a business reply envelope into a window envelope. The contractor manually inserted the returned permission form into the window envelope so that the school name and address would appear in the window. All completed permission forms received by 24 January 1973 were mailed to the schools on 25 January 1973.

1.5 Subject Categorization

As responses were received from the first subject mailing, the type of response was included on the master file. For Phase I, there were three categories: permission granted, permission denied or subject discharged, and undelivered request.

DEPARTMENT OF THE AIR FORCE
AFHRL PERSONNEL RESEARCH DIVISION (AFSC)
Lackland Air Force Base, Texas 78236

Dear Sir

Under Contract F41609-72-C-0035 with Technology Incorporated, San Antonio, Texas, this organization is doing a research study of Air Force personnel in order to aid the Air Force in continuing efforts to improve personnel utilization. As part of this study, we must obtain the scores from general mental ability tests that were administered to airmen during their high school years.

Permission has been received from the subjects of the study to obtain their transcripts from the last high school they attended, and your school was listed as the source of this information. The signed permission form from one of these subjects is attached, and it would be of great value to us if you will forward his transcript to us. The information needed from the transcript is the name, date of administration, and composite score obtained in any general mental ability tests. If this information is not on the transcript proper, please attach any documents containing this information. A self-addressed, postage-paid envelope is attached for your convenience in forwarding these records.

The information obtained in this study will be used for statistical and personnel utilization research purposes only, and any reports generated will be statistical in nature and will be destroyed after the required scores have been extracted from them. Complete transcripts (rather than the individual's scores) are being requested to save you the time and trouble involved in transcribing the scores and also in an effort to improve the accuracy of the study by maintaining close control over all transcription procedures.

Two copies of the permission form have been sent to you. Please retain the original for your records and fasten the remaining copy to the subject's records before forwarding them.

The information you provide will be of great value to the Air Force. Your help in providing this information is sincerely appreciated. This study has been approved for administration under USAF Survey Control Number 73-65.

Sincerely

Ralph S. Hoggatt

RALPH S. HOGGATT, Colonel, USAF
Chief, Personnel Research Division

2 Atch
1. Release form
2. Self-addressed envelope

Figure 3.

Cover Letter to Schools

1.6 Score Encoding

As transcripts were received from the schools, they were delivered to the Contract Monitor. Air Force personnel transcribed the name of the general mental ability test, date of administration, score obtained and units in which the score was reported from the transcripts onto the permission forms returned by the schools. These permission forms were then returned to the Contractor who merged this information into the master file. At the same time, the records of the subjects whose transcripts contained no applicable test were flagged. At the end of Phase I, there were a total of six categories with their appropriate response codes.

Response Code	Description
Blank	No Response
1	Permission received, no school response
2	Permission received, transcript received, score coded
3	Invalid address on request for permission
4	Permission received, transcript received, no applicable score
9	Permission denied or subject discharged

1.7 Interim Report

A computer program was developed to produce a tape file similar in structure to that provided by the government. This file contained records for each user with a response code of 2 who in addition had at least one control subject with a response code of 2. When two control subjects with

response codes of 2 were present the control whose test date was less different from the user's was chosen. The record contained the master records of the user and the chosen control, along with the difference in months between the test dates of the user and control.

This tape was used in the production of the Interim Report [2] which was delivered to the Contract Monitor on 12 March 1973 as called for in Paragraph 4.1.3 of the Contract. The report contained the following: for each subject on the file, the name of the general mental ability test chosen, the date it was taken, the score obtained and the units in which it was reported; for each pair, the difference in months between the test administration to the user and the control subject; and for each drug, the mean difference between administrations expressed in months.

The document also contained a report of the response in each of the five response categories then in use (See 1.6).

2. Phase II: Follow-Up

Permission to proceed with Phase II of the study was received on 2 April 1973. The purpose of this Phase was to attempt, by follow-up mailings and the telephone where necessary, to increase the number of responses significantly over that obtained in Phase I.

2.1 Preparations

Three areas were selected for follow-up: subjects whose first request was returned by the post office; subjects who failed to respond to the first request; and schools who had failed to respond to a request for a transcript. A new set of address labels was provided by the Contract Monitor. These labels, by mutual agreement between the contractor and the Contract Monitor, were provided as Cheshire labels.

The envelopes for the two subject groups were overprinted with the company addresses as described in 1.2. Labels containing the new addresses were applied by machine for the entire population for whom such labels were provided.

Cover letters to the subjects were prepared by the Air Force for each of the two categories (Figures 4 and 5) and printed and folded by a subcontractor.

Numerous requests from high schools during Phase I for additional information prompted the inclusion of date of birth on the permission form. The Air Force kindly

DEPARTMENT OF THE AIR FORCE
AFHRL PERSONNEL RESEARCH DIVISION (AFSC)
LACKLAND AIR FORCE BASE, TEXAS 78236

REPLY TO ATTN OF: PEPD

SUBJECT: High School Test Scores (SCN 73-65)

TO: Personnel Selected

1. Under Air Force Contract F41609-72-C-0035, Technology Incorporated of San Antonio, Texas is doing a research task which requires certain standard test scores from your high school record. You are one of several thousand individuals selected for participation in the effort. The information will be used to help the Air Force make more efficient use of its personnel.

2. The high schools need authorization from you to release to us the records containing your scores. We have attached a form so that you can voluntarily give them this authorization. Please complete this form today and return it to us in the attached self-addressed envelope.

3. No information from your transcript will reach your personnel file. All reports resulting from this research will be statistical summaries only and will not identify any individual persons. Any records sent to us by your school will be destroyed after the test scores have been extracted from them. The scores and all other information used in the study will be kept STRICTLY CONFIDENTIAL.

4. Please do not lay this form aside. It will only take a moment for you to complete it. We need these scores from your high school as soon as possible, so please fill it out now and send it to us.

5. Your response to this letter is strictly voluntary. Your help and cooperation will be greatly appreciated.

6. This study has been approved for administration under USAF Survey Control Number 73-65.

FOR THE COMMANDER

Ralph S. Hoggatt

RALPH S. HOGGATT, Colonel, USAF
Chief, Personnel Research Division

2 Atch
1. Release form
2. Self-addressed envelope

Figure 4.

Phase II Cover Letter To Subjects

(Forms Not Delivered in Phase I)

DEPARTMENT OF THE AIR FORCE
AFHRL PERSONNEL RESEARCH DIVISION (AFSC)
LACKLAND AIR FORCE BASE, TEXAS 78236

REPLY TO ATTN OF: PEPD

SUBJECT: High School Test Scores (SCN 73-65)

TO: Personnel Selected

1. A few weeks ago you were asked to cooperate in a research study being conducted by this organization under Air Force Contract F41609-72-C-0035 with Technology Incorporated which requires certain standard test scores from your high school record. This research will be very useful to help the Air Force make more efficient use of its personnel.

2. The high schools need authorization from you to release to us the records containing your scores. We have attached another copy of the form we sent you before so that you can voluntarily give the high schools this authorization. Please complete this form today, before you forget, and return it to us in the attached self-addressed envelope.

3. No information from your transcript will reach your personnel file. The results from this research will be reported in statistical summaries and will not identify individual persons.

4. Please do not lay this form aside. It will only take a moment for you to complete it. We need these scores from your high school as soon as possible, so please fill it out now and send it to us.

5. Your response to this letter is strictly voluntary. Your help and cooperation will be greatly appreciated.

6. This study has been approved for administration under USAF Survey Control Number 73-65.

FOR THE COMMANDER

Ralph S. Hoggatt

RALPH S. HOGGATT, Colonel, USAF
Chief, Personnel Research Division

2 Atch
1. Release form
2. Self-addressed envelope

Figure 5.

Phase II Cover Letters to Subjects

(No Response in Phase I)

provided us with a magnetic tape containing this information which was merged onto the master file and was subsequently encoded on the forms when they were generated by computer.

Two sets of permission forms were generated. The first was for those subjects who failed to respond to Phase I. These forms bore the legend "Second Request" under the birthdate in the bottom field on the form. This group of forms was to accompany the cover letter in Figure 5. The second, to those whose Phase I requests were returned by the post office, contained no such legend and were to accompany the letter in Figure 4.

2.2 School Follow-Up Mailing

A cover letter was developed by the Contractor to attempt to solicit information from those schools who had failed to respond in Phase I (Figure 6). A list was obtained from the master file of the subjects in this category, their permission forms were obtained and encoded with the dates of birth of the subjects and a Xerox copy of the form was sent to each nonresponding school together with a copy of the original letter (Figure 2) and a new business reply envelope.

2.3 Second Subject Mailing

The permission forms were prepared and mailed to the subjects in a manner similar to that described in 1.2, with two major differences. First, the address labels were applied by machine; second, there were two groups of permission forms to be mailed, each in service number order and each with a different cover letter; this necessitated two "passes" through the labeled envelopes. This process was completed 10 April 1973.

TECHNOLOGY INCORPORATED
LIFE SCIENCES DIVISION
8531 NORTH NEW BRAUNFELS AVENUE
SAN ANTONIO, TEXAS 78217
PHONE: 512/824-7373
TWX: 910/871-1150

17 April 1973

Gentlemen:

Some time ago you were sent a letter from Col. Hoggatt of the Personnel Research Division of the Air Force Human Resources Laboratory (AFSC), United States Air Force, requesting that a transcript of the high school record of a subject of the study we are performing for the Air Force be sent to us as part of the requirements of Air Force Contract F41609-72-C-0035.

Our records do not show that we have heard from you, and we are wondering if perhaps you have misplaced this request? We have enclosed copies of both the original letter from Col. Hoggatt and the signed permission form in which the subject granted his permission for you to release his records to us. Note that we have added the subject's date of birth in the upper right hand corner of the form as an aid to you in the location of his records.

If you are unable to locate his records, or if there is some other difficulty with which we may be of help, please do not hesitate to contact us; it would be most helpful if you would cite the subject's service number (at the top center of the permission form) in any correspondence with us.

We have also enclosed a self-addressed, postage-paid envelope for your convenience in either sending us his transcript or in corresponding with us.

Please remember to attach a copy of the permission form to his records when you do send them; this enables us to process his records more accurately and quickly.

This study is of much interest to the Air Force, and we appreciate any help you can give us in providing this information. The information extracted from the transcripts will appear in statistical summaries only and will not enter the personnel records of the subject; nor will it affect the subject directly in any way, beneficially or adversely. The results of the study will be used to improve personnel utilization in the Air Force.

We are anxiously waiting to hear from you.

Sincerely,

Charles C. Stevens
Project Director
Contract F41609-72-C-0035

Figure 6

Follow-up Letter to Nonresponding Schools

2.4 Phase II: Processing

The incoming returns were processed in a manner similar to Phase I as described in Paragraphs 1.4 - 1.6. The second school mailing was sent on 8 May 1973, with all permission forms arriving after that date being processed as they were received.

At the request of the contract monitor, an additional response code (5, subject discharged) was added and the Phase I information corrected to reflect the change.

3. Data Analysis and Reporting

3.1 Literature Search

In order to provide a basis for comparison between the various general mental ability tests for which we received scores, it was necessary to determine the meaning of the scores and the units in which they were reported. In this process, it was found that certain of these scores were meaningless, not convertible, or suspect. A list of test name abbreviations used in encoding and processing the test information is contained in Table I. The tests and score units found acceptable are summarized in Tables 2 - 4.

3.2 Conversion to Z-Scores

The form to which all scores were converted is the Z-score, with a mean of zero and unity standard deviation. Raw scores and IQ scores were converted by subtracting the national mean for the test from the score and dividing the result by the given standard deviation. Stanines have by definition a mean of 5 and a standard deviation of 2 and were processed similarly. A few subjects who attended school in the San Diego, California area had their scores reported in special units which could be converted by subtracting the score from 10 and processing the result as a stanine.

Percentiles and percentile bands were converted using a table of probabilities [3], percentile conversion being accomplished by a simple table lookup and percentile band conversion by computing the mean of the items located for the upper and lower limit. The AQE and ASVAB General

Aptitude Index was treated as a percentile whether coded as "PC" (percentile) or "GA" (General Aptitude Index) on the master file.

3.3 Production of Distribution Tables

A conversion was made for the AQE General Aptitude Index into a Z-score by the aforementioned table lookup to allow direct comparison between the high school and AQE aptitude scores.

All subjects for whom acceptable scores were found were flagged on the master file with a response code of "8".

A tape file was then generated similar to that described in 1.7 except that only subjects with a response code of "8" were indexed. A program was then developed to produce a list of users and a list of controls with response code "8" who were not a member of a pair on the tape. These lists were used to develop additional pairs in order to augment the sample size. A second tape file of the same description was generated to include these pairs. This file was used to produce Tables 5 - 11, which are intended to fulfill the requirements of paragraphs 4.3.2 - 4.3.6 of the contract; Tables 12 - 19, to fulfill paragraph 4.3.8; Tables 20 - 40, to fulfill paragraph 4.3.9; and Table 41, to fulfill paragraph 4.3.7.

Tables 20 - 40 are similar in format to Tables 5 - 11. They represent a subdivision of the population described in the more general tables (5 - 11) into length of use categories as specified in paragraph 4.3.9 of the contract. The

format which consists of a separate table for each length of use category was approved by the Contract Monitor by telephone on 14 August 1972. It might be argued that the population should have been subdivided by duration of use in years. The paucity of users with drug use histories extending over a period greater than two years dictated the subdivision into three groups because the distributions generated by more subdivision would have proved meaningless for the small populations involved. This reduction in scope of the three-dimensional distributions was approved by the Contract Monitor by telephone on 15 August 1973.

3.4 Production of Magnetic Tape Data Files

A magnetic tape data file was developed containing the following information for each combination of variables listed in Table 42.

Index to X-variable ; (Table 42)
Index to Y-variable ; (Table 42)
Number of drug users in population;
Sum of X;
Sum of X^2;
Sum of Y;
Sum of Y^2;
Sum of XY;
Mean of X;
Standard Deviation of X;
Mean of Y;
Standard Deviation of Y;
Slope of Fitted Line;
Intercept of Fitted Line;

Correlation Coefficient; and

Standard Deviation of Y about Line.

See Appendix for formulae used in these computations.

A second file, in essence a copy of the master file used in the project, contained all information on each subject provided by the Air Force and obtained by the contractor during the project.

These two files were merged onto a single magnetic tape in the recording mode specified in the contract and delivered to the contractor on 2 August 1973, together with an initial draft of the format descriptions of the two files.

The cover letter, which was in addition the quarterly report, was in error in its statement of the delivery date. The files were ready to be converted into the required format at that time; the subcontractor's equipment failed when the conversion was attempted and repairs were not completed for two days.

After the tape was delivered on 2 August 1973, several errors were discovered in the program to develop the intercorrelation matrix. A corrected tape was delivered on 24 August 1973. A complete description of the formats of the two files is included in the Appendix.

4. Results

4.1 Response

As a result of Phase I processing, 3123 subjects (1096 users and 2027 controls) granted their permission for their high schools to release transcripts; 58 subjects (21 users and 37 controls) denied this permission or had been discharged from the service. 2815 forms (for 958 users and 1857 controls) were returned by the post office because of improper addresses. No response was received from the remaining 4518 subjects of whom 1666 were users and 2852 were controls.

Of the 3123 permission forms forwarded to the high schools, 2251 (799 users and 1452 controls) elicited a transcript from which the requisite scores could be obtained and 383 (for 141 users and 242 controls) elicited transcripts or responses indicating that no applicable data were available. At the time of the interim report, 489 forms (for 156 users and 333 controls) either had not been received or had not been processed due to requirements for follow-up correspondence.

Phase II effort was directed toward a second attempt to contact two groups of subjects - those who had not responded to Phase I and those whose forms had not been delivered and also towards obtaining test information on the 489 subjects from whose schools the requisite information had not been received. No attempt was made during Phase II to follow up on those schools which failed to respond to requests for transcripts originating from non-respondents in Phase I.

Phase II results were encouraging. The total number of responses from the subjects rose to 4753 (1670 users and 3083 controls). This figure included 112 who denied their permission (47 users and 65 controls) and 4641 (1623 users and 3018 controls) who granted it. 3077 subjects (1127 users and 1950 controls) failed to respond to either request (Phase I or Phase II) for permission. A total of 2627 subjects (917 users and 1710 controls) either never received their forms in either phase due to bad addresses or failed to respond in Phase I and failed to receive the solicitation in Phase II.

At the request of the Contract Monitor, a new category of response was developed: discharge from service. In Phase I statistics, these were included with permission denials; during Phase II the source documents were examined and the small number of subjects falling into this category from Phase I were reclassified. The source documents for Phase II were maintained separately. There were 57 subjects (27 users and 30 controls) discharged before they responded; some of these may have received and ignored the Phase I solicitations.

Of the 4641 permission forms received from subjects, 3757 (1315 users and 2442 controls) elicited transcripts with mental ability test scores. Of these, 3510 (1231 users and 2279 controls) were convertible to Z-scores and the remainder (84 users and 163 controls) were not. 769 forms (from 275 users and 484 controls) elicited information indicating that no applicable score was available. No response from the schools was received for 125 subjects (33 users and 92 controls).

4.2 Conclusions

Tables 5 - 41 contain some interesting information. An examination of the difference between the users' mean score and the controls' mean score in the various sub-groups represented in these tables shows that, in general, the mean users' score is higher, by an average of about 0.1, than the mean controls' score. Since the users' and the controls' AQE scores were the same, this indicates that in general the users' general mental ability fell (or the controls' rose) during the period between the administrations of the high school test and the AQE. Interestingly enough, there does not seem to be any consistent rate of change of this difference over time or over increasing use.

Tables 43 - 46 present extracts from the correlation matrix file provided to the government. In general, the correlation between duration of drug use and the intelligence function specified is higher than that between frequency of use or total number of uses and the same intelligence function. This may be due in part to the limited number of values that duration of use may take, being an integer value between 1 and 9 .

Examination of slope in Tables 45 and 46 indicates little or no significant change in general mental ability as a result of drug use. Where slope and correlation coefficient are both large, indicating a possible significant change, the size of the sample is small, mitigating its strength. The larger the sample, the smaller the slope of the fitted line, and the less correlation between the two variables.

We feel that the differences in mean scores between the drug users and the control subjects cannot be stated to be a function of drug use per se because of the lack of correlation between the drug use parameters and change in mental ability. The mere fact of drug use seems to be far more important than any other variable. This suggests the possibility that the differences are due, at least in part, to the psychological effects of the peer group (i.e., the "drug culture") on the subjects. It seems possible, at least from a consideration of the data analysis performed in this study, that the attitudes of the drug user (and ex-user) group toward the Air Force in general, and perhaps toward the Airman Qualifying Examination in particular, could have been sufficiently different from those of the control group when the subjects took the AQE to cause the differences in mental ability observed between the two groups.

5. Tables

The tables referred to in the body of this report are presented in a separate section to preserve the continuity of the text.

TABLE 1

TEST NAME ABBREVIATIONS

NOTE: No attempt was made to convert the scores from tests marked with an asterisk. This could be for one or more of the following reasons:

1. Ambiguity in test name (e.g. MAT, TM, CAT).
2. Test not located (e.g. DAP, KH, MA).
3. No information located on scoring (e.g. CTBS, CAT, GATB).
4. Norms for test not national (e.g. FLA12, FLA9, OHIOPSYCH).
5. Test found to be inapplicable after coding (e.g. ND).

CODE		NAME
ACT		American College Testing Program
AQE		Airman Qualifying Examination
ASVAB		Armed Services Vocational Aptitude Battery
CALIFSTP	*	California State Testing Program
CAT	*	California Achievement Tests, Cognitive Abilities Test
CCF	*	?
CTBS	*	Comprehensive Test of Basic Skills
CTMM		California Test of Mental Maturity
DAP	*	?
DAT		Differential Aptitude Tests
ETS	*	(a publisher, not a test)
FLA12	*	Florida 12th Grade Testing Program
FLA9	*	Florida 9th Grade Testing Program
GATB	*	General Aptitude Test Battery
HN		Henmon-Nelson Test of Mental Ability
HSPT		SRA High School Placement Test
ITBS		Iowa Test of Basic Skills
ITED		Iowa Test of Educational Development

Test Name Abbreviations, Cont'd.

KA		Kuhlmann-Anderson Intelligence Test
KF		Kuhlmann-Finch Tests
KH	*	?
LL	*	Lowry-Lucier Reasoning Test Combination
LT		Lorge-Thorndike
MA	*	?
MAT	*	Metropolitan Achievement Tests, Multiple Aptitude Tests
METROSAT	*	Metropolitan Scholastic Aptitude Tests
MOST	*	?
ND	*	Nelson-Denny Reading Test
NEDT		SRA National Educational Development Test
NMSQT		National Merit Scholarship Qualifying Test
NOT GIVEN		Test name not provided by school; percentile or IQ accepted at face value
OHIOPSYCH	*	Ohio State University Psychological Test
OHIOSURV	*	?
OIMAT	*	?
OMAT	*	?
OREGHSACH	*	Oregon High School Achievement Test
OTIS		All Otis Tests (Otis-Lennon, Quick Scoring, etc.)
PD		Pintner-Durost Elementary Test
PHILMA	*	Philadelphia Mental Ability Test
PINTNER		Pintner Intelligence Test
PMAT	*	Philadelphia Mental Ability Test
PPED	*	?
PREP	*	Pupil Record of Educational Progress
PSAT		CEEB Preliminary Scholastic Aptitude Test
REGENTS	*	New York State Regents Examination
RSE	*	?

SATHS	*	?
SATV		CEEB Scholastic Aptitude Test (Verbal Only)
SB		Stanford-Binet Intelligence Scale
SCAT		Cooperative School and College Ability Test
SCHOLPLMT	*	Scholastic Placement Test
SHSP	*	? (HSPT?)
SRA	*	(A publisher, not a test)
SRAACH	*	SRA Achievement Series
SRAPMA		SRA Primary Mental Abilities Test
SRATB	*	SRA Teach Battery?
SRATEA		SRA Test of Educational Ability
STANACH	*	Stanford Achievement Test
TAP	*	Test of Academic Progress
TM	*	Terman-McNemar or Thanet Mental Test
WECHSLER		Wechsler Adult Intelligence Scale: also WISC
WISC		Wechsler Intelligence Scale for Children

TABLE 2

TEST/SCORE-UNIT COMBINATIONS ACCEPTED AT FACE VALUE

UNIT	TESTS						
Percentile (PC)	AQE	ASVAB	DAT	HN	HSPT	ITBS	
	ITED	LT	NEDT	OTIS	PMA	SCAT	
Percentile Bands (PCB)	SCAT	STEP					
Stanines (ST)	CTMM	DAT	HN	ITED	LT	OTIS	SCAT
San Diego Scores (SD)	HN	ITED	LT				
General Apt. Index(GA)	AQE	ASVAB					

TABLE 3

RAW SCORE CONVERSION FACTORS

TEST	MEAN	SD	REFERENCE
ACT	15	5	4
ITED	15	5	5
NEDT	15	5	6
NMSQT	75	25	5
PSAT	36	12	7
SATV	360	120	8

TABLE 4

IQ CONVERSION FACTORS (ALL HAVE MEAN OF 100)

TEST	SD	REFERENCE
CTMM	16	9
HN	16	10
HSPT	16	11
KA	16	12
KF	16	13
LT	16	14
OTIS	16	15
PINTNER	15	16
PMA	16	17
SB	16	18
TEA	16	19
WAIS	15	20
WISC	15	21
NOT GIVEN	16	22

TABLE 5
PERFORMANCE VS. QUANTITY OF DRUG USE

MARIJUANA (ALL)

BEST COPY AVAILABLE

TIMES USED	PERFORMANCE DECILES											
	0	1	2	3	4	5	6	7	8	9	MEAN/SD	N
1	2	4	11	12	13	25	45	44	60	59	0.6990	275
%	0.7	1.4	4.0	4.3	4.7	9.0	16.3	16.0	21.8	21.4	0.750	
CONTROL	7	4	8	20	29	27	27	43	59	51	0.6060	
%	2.5	1.4	2.9	7.2	10.5	9.8	9.8	15.6	21.4	18.5	0.891	
2		3	7	6	8	18	18	36	34	61	0.8490	191
%	0.0	1.5	3.6	3.1	4.1	9.4	9.4	18.8	17.8	31.9	0.793	
CONTROL	2	4	9	2	11	26	20	35	44	38	0.6819	
%	1.0	2.0	4.7	1.0	5.7	13.6	10.4	18.3	23.0	19.8	0.782	
3-5		5	7	10	13	34	33	37	48	69	0.7631	256
%	0.0	1.9	2.7	3.9	5.0	13.2	12.8	14.4	18.7	26.9	0.770	
CONTROL		8	9	8	17	26	30	44	58	56	0.7144	
%	0.0	3.1	3.5	3.1	6.6	10.1	11.7	17.1	22.6	21.8	0.778	
6-10		2		1	7	16	19	23	32	50	0.9769	150
%	0.0	1.3	0.0	0.6	4.6	10.6	12.6	15.3	21.3	33.3	0.775	
CONTROL		3	6	3	9	11	16	16	42	44	0.8510	
%	0.0	2.0	4.0	2.0	6.0	7.3	10.6	10.6	28.0	29.3	0.778	
11-15	1	1		2	1	4	6	11	16	18	0.9335	60
%	1.6	1.6	0.0	3.3	1.6	6.6	10.0	18.3	26.6	30.0	0.770	
CONTROL		1	4	5	3	6	9	6	11	15	0.6493	
%	0.0	1.6	6.6	8.3	5.0	10.0	15.0	10.0	18.3	25.0	0.808	
16-20				3	3	6	7	8	8	14	0.8820	49
%	0.0	0.0	0.0	6.1	6.1	12.2	14.2	16.3	16.3	28.5	0.803	
CONTROL				4	3	6	3	7	15	11	0.8477	
%	0.0	0.0	0.0	8.1	6.1	12.2	6.1	14.2	30.6	22.4	0.756	
21-30		2		2	2	6	11	3	13	15	0.8253	54
%	0.0	3.7	0.0	3.7	3.7	11.1	20.3	5.5	24.0	27.7	0.801	
CONTROL		2	5	3		8	11	4	10	11	0.5836	
%	0.0	3.7	9.2	5.5	0.0	14.8	20.3	7.4	18.5	20.3	0.829	
31-50			1	3	1	3	1	3	3	18	1.0740	33
%	0.0	0.0	3.0	9.0	3.0	9.0	3.0	9.0	9.0	54.5	0.880	
CONTROL	1	2		2	1	2	7	2	6	8	0.5270	
%	3.0	6.0	0.0	6.0	3.0	6.0	21.2	6.0	24.2	24.2	0.882	
51-100		2	1	1	2	9	6	6	6	21	0.9266	54
%	0.0	3.7	1.8	1.8	3.7	16.6	11.1	11.1	11.1	38.8	0.931	
CONTROL		3		2	5	7	4	7	9	17	0.7442	
%	0.0	5.5	0.0	3.7	9.2	12.9	7.4	12.9	16.6	31.4	0.823	
101-	2	5	1	4	7	11	10	9	14	26	0.7220	89
%	2.2	5.6	1.1	4.4	7.8	12.3	11.2	10.1	15.7	29.2	0.992	
CONTROL	3	1	5	2	9	11	9	7	23	19	0.6567	
%	3.3	1.1	5.6	2.2	10.1	12.3	10.1	7.8	25.8	21.3	0.923	
											0.8149	1211
											0.805	
											0.6899	
											0.826	

TABLE 6
PERFORMANCE VS. QUANTITY OF DRUG USE

BEST COPY AVAILABLE

AMPHETAMINES

TIMES USED	PERFORMANCE DECILES											
	0	1	2	3	4	5	6	7	8	9	MEAN/SD	N
1			2	1	2	7	3	5	3	15	0.8478	38
%	0.0	0.0	5.2	2.6	5.2	18.4	7.8	13.1	7.8	39.4	0.865	
CONTROL		1		1	6	3	4	6	9	8	0.7209	
%	0.0	2.6	0.0	2.6	15.7	7.8	10.5	15.7	23.6	21.0	0.797	
2-5		1		1		7	5	2	13	14	0.9794	43
%	0.0	2.3	0.0	2.3	0.0	16.2	11.6	4.6	30.2	32.5	0.780	
CONTROL		2			1	1	10	7	9	13	0.8840	
%	0.0	4.6	0.0	0.0	2.3	2.3	23.2	16.2	20.9	30.2	0.730	
6-20		2			1	4	5	6	4	11	0.8198	33
%	0.0	6.0	0.0	0.0	3.0	12.1	15.1	18.1	12.1	33.3	0.827	
CONTROL			3		4	3	2	2	12	7	0.7951	
%	0.0	0.0	9.0	0.0	12.1	9.0	6.0	6.0	36.3	21.2	0.829	
21-	2		1		4	2	5	2	3	6	0.4800	25
%	8.0	0.0	4.0	0.0	16.0	8.0	20.0	8.0	12.0	24.0	0.973	
CONTROL		1	1	2	2	7	1	3	2	6	0.4520	
%	0.0	4.0	4.0	8.0	8.0	28.0	4.0	12.0	8.0	24.0	0.829	
											0.8123	134
											0.860	
											0.7406	
											0.796	

TABLE 7
PERFORMANCE VS. QUANTITY OF DRUG USE

BEST COPY AVAILABLE

BARBITURATES

TIMES USED	PERFORMANCE DECILES											
	0	1	2	3	4	5	6	7	8	9	MEAN/SD	N
1	1	1		2	1		2	6	2	9	0.8121	24
%	4.1	4.1	0.0	8.3	4.1	0.0	8.3	25.0	8.3	37.5	1.012	
CONTROL		2	1	1	2	1	4	2	5	6	0.6485	
%	0.0	8.3	4.1	4.1	8.3	4.1	16.6	8.3	20.8	25.0	0.908	
2-	1	4	1		3	5	3	5	6	4	0.3810	32
%	3.1	12.5	3.1	0.0	9.3	15.6	9.3	15.6	18.7	12.5	0.947	
CONTROL	1		3	2	5	5	4	3	3	6	0.3723	
%	3.1	0.0	9.3	6.2	15.6	15.6	12.5	9.3	9.3	18.7	0.874	
											0.5658	56
											0.990	
											0.4906	
											0.891	

TABLE 8
PERFORMANCE VS. QUANTITY OF DRUG USE

BEST COPY AVAILABLE

HALLUCINOGENS

TIMES USED	PERFORMANCE DECILES											
	0	1	2	3	4	5	6	7	8	9	MEAN/SD	N
1	1	1	1	4	5	7	4	12	19	19	0.7995	73
%	1.3	1.3	1.3	5.4	6.8	9.5	5.4	16.4	26.0	26.0	0.186	
CONTROL	1	3	2	1	5	11	6	10	15	17	0.6476	
%	1.3	4.1	2.7	1.3	6.8	15.0	10.9	13.6	20.5	23.2	0.815	
2-5	1	2	2	2	5	4	7	5	11	22	0.8450	61
%	1.6	3.2	3.2	3.2	8.1	6.5	11.4	8.1	18.0	36.0	0.975	
CONTROL	1	1	1		7	8	8	3	13	19	0.8259	
%	1.6	1.6	1.6	0.0	11.4	13.1	13.1	4.9	21.3	31.1	0.904	
6-20				2	1	4	5	3	3	12	0.9428	30
%	0.0	0.0	0.0	6.6	3.3	13.3	16.6	10.0	10.0	40.0	0.769	
CONTROL			1	1	1	3	3	5	10	6	0.8090	
%	0.0	0.0	3.3	3.3	3.3	10.0	10.0	16.6	33.3	20.0	0.676	
21-	1	2		2	4	9	3	5	3	12	0.6294	41
%	2.4	4.8	0.0	4.8	9.7	21.9	7.3	12.1	7.3	29.2	0.943	
CONTROL	1	1	3	2	5	6	4	2	9	8	0.4746	
%	2.4	2.4	7.3	4.8	12.1	14.6	9.7	4.8	21.9	19.5	0.147	
											0.8000	205
											0.882	
											0.6927	
											0.836	

TABLE 9
PERFORMANCE VS. QUANTITY OF DRUG USE

BEST COPY AVAILABLE

OPIATES

TIMES USED		PERFORMANCE DECILES										
		0	1	2	3	4	5	6	7	8	9	MEAN/SD	N
1			1			1	1	1		1	3	0.6125	8
	%	0.0	12.5	0.0	0.0	12.5	12.5	12.5	0.0	12.5	37.5	0.869	
CONTROL		1		1		1	1	1	1		2	0.1151	
	%	12.5	0.0	12.5	0.0	12.5	12.5	12.5	12.5	0.0	25.0	1.312	
2-			2			2	2		2	1	2	0.3444	11
	%	0.0	18.1	0.0	0.0	18.1	18.1	0.0	18.1	9.0	18.1	0.928	
CONTROL				1		1	1	2	1	3	2	0.7027	
	%	0.0	0.0	9.0	0.0	9.0	9.0	18.1	9.0	27.2	18.1	0.843	
												0.4573	19
												0.889	
												0.4553	
												1.074	

TABLE 10
PERFORMANCE VS. QUANTITY OF DRUG USE

OTHER DRUGS

BEST COPY AVAILABLE

TIMES USED	PERFORMANCE DECILES											
	0	1	2	3	4	5	6	7	8	9	MEAN/SD	N
1		1			1	1	1		2	2	0.6104	8
%	0.0	12.5	0.0	0.0	12.5	12.5	12.5	0.0	25.0	25.0	0.901	
CONTROL			1		1	1	3		2		0.3148	
%	0.0	0.0	12.5	0.0	12.5	12.5	37.5	0.0	25.0	0.0	0.594	
2-	1				1	2	1	1	1	1	0.2231	8
%	12.5	0.0	0.0	0.0	12.5	25.0	12.5	12.5	12.5	12.5	1.054	
CONTROL			1	2		1	1	2	1		0.1765	
%	0.0	0.0	12.5	25.0	0.0	12.5	12.5	25.0	12.5	0.0	0.690	
											0.4167	16
											0.968	
											0.2456	
											0.626	

TABLE 11
PERFORMANCE VS. QUANTITY OF DRUG USE

MARIJUANA (ONLY)

BEST COPY AVAILABLE

TIMES USED		PERFORMANCE DECILES											
		0	1	2	3	4	5	6	7	8	9	MEAN/SD	N
1		1	3	10	12	11	24	43	39	54	53	0.7052	255
	%	0.3	1.1	3.9	4.7	4.3	9.4	16.8	15.2	21.1	20.7	0.733	
CONTROL		5	4	7	19	28	27	26	39	53	47	0.6071	
	%	1.9	1.5	2.7	7.4	10.9	10.5	10.1	15.2	20.7	18.4	0.870	
2			3	6	6	8	15	17	32	31	59	0.8637	177
	%	0.0	1.6	3.3	3.3	4.5	8.4	9.6	18.0	17.5	33.3	0.800	
CONTROL		2	4	9	2	9	23	19	32	42	35	0.6600	
	%	1.1	2.2	5.0	1.1	5.0	12.9	10.7	18.0	23.7	19.7	0.787	
3-5			4	5	9	12	31	32	33	41	60	0.7611	227
	%	0.0	1.7	2.2	3.9	5.2	13.6	14.0	14.5	18.0	26.4	0.762	
CONTROL			7	9	8	13	22	28	37	52	51	0.7172	
	%	0.0	3.0	3.9	3.5	5.7	9.6	12.3	16.2	22.9	22.4	0.776	
6-10			1			4	15	16	18	24	37	0.9550	115
	%	0.0	0.8	0.0	0.0	3.4	13.0	13.9	15.6	20.8	32.1	0.745	
CONTROL			3	5	3	7	7	14	11	32	33	0.8249	
	%	0.0	2.6	4.3	2.6	6.0	6.0	12.1	9.5	27.6	28.6	0.806	
11-15			1		2	1	3	5	9	8	11	0.9072	40
	%	0.0	2.5	0.0	5.0	2.5	7.5	12.5	22.5	20.0	27.5	0.810	
CONTROL			1	4	3	2	4	4	5	7	10	0.6073	
	%	0.0	2.5	10.0	7.5	5.0	10.0	10.0	12.5	17.5	25.0	0.848	
16-20					2	2	5	5	6	6	10	0.8031	36
	%	0.0	0.0	0.0	5.5	5.5	13.8	13.8	16.6	16.6	27.7	0.791	
CONTROL					4	1	5	2	6	11	7	0.8124	
	%	0.0	0.0	0.0	11.1	2.7	13.8	5.5	16.6	30.5	19.4	0.795	
21-30			1		1	1	3	6	2	8	8	0.8693	30
	%	0.0	3.3	0.0	3.3	3.3	10.0	20.0	6.6	26.6	26.6	0.799	
CONTROL			1	3	3		4	5	3	5	6	0.5126	
	%	0.0	3.3	10.0	10.0	0.0	13.3	16.6	10.0	16.6	20.0	0.816	
31-50				1	1				2	2	10	1.3065	16
	%	0.0	0.0	6.2	6.2	0.0	0.0	0.0	12.5	12.5	62.5	0.933	
CONTROL		1	1		1	1	1	3	1	3	4	0.3791	
	%	6.2	6.2	0.0	6.2	6.2	6.2	18.7	6.2	18.7	25.0	1.060	
51-100			2		1		2	4		3	8	0.9500	20
	%	0.0	10.0	0.0	5.0	0.0	10.0	20.0	0.0	15.0	40.0	1.119	
CONTROL					2	2	3	1	2	2	7	0.7836	
	%	0.0	0.0	0.0	10.0	10.0	15.0	5.0	10.0	10.0	35.0	0.742	
101-			2	1	1			1	2	4	7	0.9134	18
	%	0.0	11.1	5.5	5.5	0.0	0.0	5.5	11.1	22.2	38.8	1.040	
CONTROL		1		1			2	1	2	6	5	0.9643	
	%	5.5	0.0	5.5	0.0	0.0	11.1	5.5	11.1	33.3	27.7	0.996	
												0.8161	934
												0.786	
												0.6661	
												0.125	

TABLE 12
PERFORMANCE VS. DURATION OF DRUG USE

MARIJUANA (ALL)

BEST COPY AVAILABLE

YEARS USED		PERFORMANCE DECILES 0	1	2	3	4	5	6	7	8	9	MEAN/SD	N
1	#	3	12	24	26	39	72	95	114	132	181	0.7460	698
CONTROL	%	0.4	1.7	3.4	3.7	5.5	10.3	13.6	16.3	18.9	25.9	0.726	
	#	8	14	25	30	49	78	87	108	167	132	0.6628	
	%	1.1	2.0	3.5	4.2	7.0	11.1	12.4	15.4	23.9	18.9	0.803	
2	#	1	6	3	13	8	34	41	48	72	95	0.8765	321
CONTROL	%	0.3	1.8	0.9	4.0	2.4	10.5	12.7	14.9	22.4	29.5	0.709	
	#	4	12	14	12	23	36	25	37	73	85	0.7031	
	%	1.2	3.7	4.3	3.7	7.1	11.2	7.7	11.5	22.7	26.4	0.882	
3	#	0.0	3	0.0	5	5	15	14	10	18	38	0.9173	108
CONTROL	%		2.7		4.6	4.6	13.8	12.9	9.2	16.6	35.1	0.449	
	#	0.0	1	4	6	7	12	16	14	20	28	0.6995	
	%		0.9	3.7	5.5	6.4	11.1	14.8	12.9	18.5	25.9	0.746	
4	#	0.0	1	1		3	3	5	6	6	20	1.0474	45
CONTROL	%		2.2	2.2	0.0	6.6	6.6	11.1	13.3	13.3	44.4	0.690	
	#	1		1	1	3	3	4	7	12	13	0.9129	
	%	2.2	0.0	2.2	2.2	6.6	6.6	8.8	15.5	26.6	28.8	0.856	
5	#	1	2			2	6	1	2	4	16	1.0226	34
CONTROL	%	2.9	5.8	0.0	0.0	5.8	17.6	2.9	5.8	11.7	47.0	0.520	
	#		1	1	2	5	1	3	4	7	10	0.7489	
	%	0.0	2.9	2.9	5.8	14.7	2.9	8.8	11.7	20.5	29.4	0.877	
6	#	0.0	0.0	0.0	0.0	0.0	1	0.0	0.0	2	1	0.9218	4
CONTROL	%						25.0			50.0	25.0	1.648	
	#	0.0	0.0	0.0	0.0	0.0	0.0	1	1	0.0	2	1.4600	
	%							25.0	25.0		50.0	1.003	
8	#	0.0	0.0	0.0	0.0	0.0	1	0.0	0.0	0.0	0.0	0.1250	1
CONTROL	%						100.0					-	
	#	0.0	0.0	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.8125	
	%			100.0								-	
												0.8149	1211
												0.805	
												0.6899	
												0.826	

TABLE 13
PERFORMANCE VS. DURATION OF DRUG USE

AMPHETAMINES

BEST COPY AVAILABLE

YEARS USED	PERFORMANCE DECILES											
	0	1	2	3	4	5	6	7	8	9	MEAN/SD	N
1			2	2	3	15	10	10	16	27	0.8618	85
%	0.0	0.0	2.3	2.3	3.5	17.6	11.7	11.7	18.8	31.7	0.725	
CONTROL		4		1	8	6	10	13	22	21	0.7983	
%	0.0	4.7	0.0	1.1	9.4	7.0	11.7	15.2	25.8	24.7	0.795	
2	1	2	1		3	2	6	3	5	13	0.7574	36
%	2.7	5.5	2.7	0.0	8.3	5.5	16.6	8.3	13.8	36.1	0.561	
CONTROL			2	2	4	6	5	4	5	8	0.5714	
%	0.0	0.0	5.5	5.5	11.1	16.6	13.8	11.1	13.8	22.2	0.754	
3					1	1	1	1	2	5	1.0756	11
%	0.0	0.0	0.0	0.0	9.0	9.0	9.0	9.0	18.1	45.4	0.825	
CONTROL			1			2	1		2	5	0.9906	
%	0.0	0.0	9.0	0.0	0.0	18.1	9.0	0.0	18.1	45.4	0.934	
4		1				1				1	0.4375	3
%	0.0	33.3	0.0	0.0	0.0	33.3	0.0	0.0	0.0	33.3	0.810	
CONTROL					1			1	1		0.0641	
%	0.0	0.0	0.0	0.0	33.3	0.0	0.0	33.3	33.3	0.0	0.029	
5							1				0.3125	1
%	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	-	
CONTROL									1		1.2500	
%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	-	
6	1					1					-0.6778	2
%	50.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.860	
CONTROL			1				1				-0.2167	
%	0.0	0.0	50.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.839	
8								1			0.6875	1
%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	-	
CONTROL									1		1.0000	
%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	-	
											0.8123	139
											0.180	
											0.7406	
											0.796	

TABLE 14
PERFORMANCE VS. DURATION OF DRUG USE

BARBITURATES

BEST COPY AVAILABLE

YEARS USED		PERFORMANCE DECILES										MEAN/SD	N
		0	1	2	3	4	5	6	7	8	9		
1		1	4		2	3	2	4	9	7	12	0.6902	44
	%	2.2	9.0	0.0	4.5	6.8	4.5	9.0	20.4	15.9	27.2	0.806	
CONTROL		1	2	2	3	4	3	8	3	1	10	0.5442	
	%	2.2	4.5	4.5	6.8	9.0	6.8	18.1	6.8	18.1	22.7	0.913	
2		1		1		1			1		1	0.0962	5
	%	20.0	0.0	20.0	0.0	20.0	0.0	0.0	20.0	0.0	20.0	0.985	
CONTROL						1	2		1		1	0.5225	
	%	0.0	0.0	0.0	0.0	20.0	40.0	0.0	20.0	0.0	20.0	0.801	
3			1				2	1	1			-0.0083	5
	%	0.0	20.0	0.0	0.0	0.0	40.0	20.0	20.0	0.0	0.0	0.982	
CONTROL				2		1	1				1	0.0608	
	%	0.0	0.0	40.0	0.0	20.0	20.0	0.0	0.0	0.0	20.0	0.979	
4							1			1		0.4375	2
	%	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	50.0	0.0	0.308	
CONTROL						1			1			0.2061	
	%	0.0	0.0	0.0	0.0	50.0	0.0	0.0	50.0	0.0	0.0	0.539	
												0.5058	50
												0.990	
												0.4406	
												0.891	

TABLE 15
PERFORMANCE VS. DURATION OF DRUG USE

HALLUCINOGENS

BEST COPY AVAILABLE

YEARS USED		PERFORMANCE DECILES										MEAN/SD	N
		0	1	2	3	4	5	6	7	8	9		
1		2	1	2	8	10	13	14	22	27	39	0.7986	138
	%	1.4	0.7	1.4	5.7	7.2	9.4	10.1	15.9	19.5	28.2	0.772	
CONTROL		2	5	3	1	12	20	15	14	32	34	0.7085	
	%	1.4	3.6	2.1	0.7	8.6	14.4	10.8	10.1	23.1	24.6	0.856	
2		1	2	1	2	1	6	5	2	9	20	0.8914	49
	%	2.0	4.0	2.0	4.0	2.0	12.2	10.2	4.0	18.3	40.8	0.587	
CONTROL				2	2	4	6	7	3	11	14	0.7605	
	%	0.0	0.0	4.0	4.0	8.1	12.2	14.2	6.1	22.4	28.5	0.752	
3			1			2	4				3	0.4399	10
	%	0.0	10.0	0.0	0.0	20.0	40.0	0.0	0.0	0.0	30.0	0.650	
CONTROL				2	1	1	1	1	1	2	1	0.2509	
	%	0.0	0.0	20.0	10.0	10.0	10.0	10.0	10.0	20.0	10.0	0.751	
4			1			2	1		1		2	0.4303	7
	%	0.0	14.2	0.0	0.0	28.5	14.2	0.0	14.2	0.0	28.5	0.769	
CONTROL		1				1	1		2	2		0.3329	
	%	14.2	0.0	0.0	0.0	14.2	14.2	0.0	28.5	28.5	0.0	0.918	
9											1	2.0675	1
	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	-	
CONTROL											1	2.0625	
	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	-	
												0.8000	205
												0.882	
												0.6927	
												0.836	

TABLE 16
PERFORMANCE VS. DURATION OF DRUG USE

OPIATES

BEST COPY AVAILABLE

YEARS USED		PERFORMANCE DECILES											
		0	1	2	3	4	5	6	7	8	9	MEAN/SD	N
1			2			2	1	1	2	2	4	0.5687	14
	%	0.0	14.2	0.0	0.0	14.2	7.1	7.1	14.2	14.2	28.5	0.939	
CONTROL		1		2		1	2	2	2	2	2	0.2484	
	%	7.1	0.0	14.2	0.0	7.1	14.2	14.2	14.2	14.2	14.2	1.079	
2			1				2					-0.2367	3
	%	0.0	33.3	0.0	0.0	0.0	66.6	0.0	0.0	0.0	0.0	1.250	
CONTROL								1		1	1	0.9683	
	%	0.0	0.0	0.0	0.0	0.0	0.0	33.3	0.0	33.3	33.3	0.490	
3						1						-0.1250	1
	%	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	-	
CONTROL						1						-0.0583	
	%	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	-	
4											1	1.5625	1
	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	-	
CONTROL											1	2.3763	
	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	-	
												0.4573	19
												0.889	
												0.4553	
												1.074	

TABLE 17
PERFORMANCE VS. DURATION OF DRUG USE

BEST COPY AVAILABLE

OTHER DRUGS

YEARS USED		PERFORMANCE DECILES										MEAN/SD	N
		0	1	2	3	4	5	6	7	8	9		
1		1	1			2	2	2		2	3	0.3931	13
	%	7.6	7.6	0.0	0.0	15.3	15.3	15.3	0.0	15.3	23.0	0.558	
CONTROL				2	1	1	2	4		3		0.2235	
	%	0.0	0.0	15.3	7.6	7.6	15.3	30.7	0.0	23.0	0.0	0.645	
2							1		1			0.4062	2
	%	0.0	0.0	0.0	0.0	0.0	50.0	0.0	50.0	0.0	0.0	0.634	
CONTROL					1				1			0.1688	
	%	0.0	0.0	0.0	50.0	0.0	0.0	0.0	50.0	0.0	0.0	0.822	
3										1		0.8750	1
	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	–	
CONTROL									1			0.0375	
	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	–	
												0.4167	16
												0.968	
												0.2456	
												0.626	

TABLE 18
PERFORMANCE VS. DURATION OF DRUG USE

MARIJUANA (ONLY)

BEST COPY AVAILABLE

YEARS USED	PERFORMANCE DECILES											
	0	1	2	3	4	5	6	7	8	9	MEAN/SD	N
1	1	10	20	25	33	66	89	101	117	155	0.7410	617
%	0.1	1.6	3.2	4.0	5.3	10.6	14.4	16.3	18.9	25.1	0.720	
CONTROL	6	13	23	28	43	70	78	99	140	117	0.6554	
%	0.9	2.1	3.7	4.5	6.9	11.3	12.6	16.0	22.6	18.9	0.798	
2		4	2	9	6	23	33	31	49	66	0.8856	223
%	0.0	1.7	0.8	4.0	2.6	10.3	14.7	13.9	21.9	29.5	0.741	
CONTROL	3	6	13	11	13	21	15	26	53	62	0.7297	
%	1.3	2.6	5.6	4.9	5.8	9.4	6.7	11.6	23.7	27.8	0.896	
3		2		1		7	6	6	13	22	1.0299	57
%	0.0	3.5	0.0	1.7	0.0	12.2	10.5	10.5	22.8	38.5	0.092	
CONTROL		1	2	6	5	4	6	8	9	16	0.8657	
%	0.0	1.7	3.5	10.5	8.7	7.0	10.5	14.0	15.7	28.0	0.811	
4		1	1			2	1	4	4	13	1.1707	26
%	0.0	3.8	3.8	0.0	0.0	7.6	3.8	15.3	15.3	50.0	0.620	
CONTROL					2	2	3	4	7	8	1.0019	
%	0.0	0.0	0.0	0.0	7.6	7.6	11.5	15.3	26.9	30.7	0.798	
5								1	3	7	1.0355	11
%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0	27.2	63.6	1.372	
CONTROL		1				1	1	2	4	2	0.7142	
%	0.0	9.0	0.0	0.0	0.0	9.0	9.0	18.1	36.3	18.1	0.819	
											0.8168	934
											0.716	
											0.6481	
											0.825	

BEST COPY AVAILABLE

TABLE 19
PERFORMANCE VS. DURATION OF DRUG USE
ALL DRUGS

YEARS USED	PERFORMANCE DECILES											
	0	1	2	3	4	5	6	7	8	9	MEAN/SD	N
1	2	13	24	28	38	72	95	112	135	177	0.7388	696
%	0.3	1.9	3.4	4.0	5.5	10.3	13.6	16.1	19.4	25.4	0.777	
CONTROL	8	16	25	29	48	80	87	108	163	132	0.6556	
%	1.1	2.3	3.6	4.2	6.9	11.5	12.5	15.5	23.4	19.0	0.806	
2	2	6	3	12	8	33	42	48	71	96	0.8756	321
%	0.6	1.9	0.9	3.7	2.5	10.3	13.1	15.0	22.1	30.0	0.762	
CONTROL	3	11	14	14	22	35	25	36	73	88	0.7217	
%	0.9	3.4	4.4	4.4	6.9	10.9	7.8	11.2	22.7	27.4	0.868	
3		3		6	4	16	13	10	21	40	0.9383	113
%	0.0	2.7	0.0	5.3	3.5	14.2	11.5	8.8	18.6	35.4	0.919	
CONTROL		2	3	6	8	12	16	15	23	26	0.6951	
%	0.0	1.8	2.7	5.3	7.1	10.7	14.2	13.3	20.4	24.8	0.736	
4		2	1		4	3	5	7	6	20	0.9838	48
%	0.0	4.2	2.1	0.0	8.3	6.3	10.4	14.6	12.5	41.7	0.920	
CONTROL	2		2	1	3	4	4	7	13	12	0.8005	
%	4.2	0.0	4.2	2.1	6.3	8.3	8.3	14.6	27.1	25.0	0.963	
5		2			3	7	2	2	4	18	1.0205	38
%	0.0	5.3	0.0	0.0	7.9	18.4	5.3	5.3	10.5	47.4	0.979	
CONTROL		1	1	2	6	1	3	5	7	12	0.7869	
%	0.0	2.6	2.6	5.3	15.8	2.6	7.9	13.2	18.4	31.6	0.903	
6						1			2	2	1.2750	5
%	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	40.0	40.0	0.931	
CONTROL							1	1		3	1.5805	
%	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	0.0	60.0	0.910	
7	1							1			-0.5341	2
%	50.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	1.904	
CONTROL							1	1			0.5625	
%	0.0	0.0	0.0	0.0	0.0	0.0	50.0	50.0	0.0	0.0	0.265	
8						1		1			0.4063	2
%	0.0	0.0	0.0	0.0	0.0	50.0	0.0	50.0	0.0	0.0	0.398	
CONTROL			1						1		0.0938	
%	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	1.282	
											0.8110	1225
											0.807	
											0.6890	
											0.928	

TABLE 20
PERFORMANCE VS. QUANTITY OF DRUG USE WITHIN DURATION CATEGORY

MARIJUANA (ALL) — 1 YEAR

BEST COPY AVAILABLE

TIMES USED	PERFORMANCE DECILES											
	0	1	2	3	4	5	6	7	8	9	MEAN/SD	N
1	2	4	11	11	13	25	45	44	60	59	0.7029	274
%	0.7	1.4	4.0	4.0	4.7	9.1	16.4	16.0	21.8	21.5	0.749	
CONTROL	7	4	8	19	29	27	27	43	59	51	0.6098	
%	2.5	1.4	2.9	6.9	10.5	9.8	9.8	15.6	21.5	18.6	0.890	
2		3	6	6	8	13	13	29	23	45	0.7933	146
%	0.0	2.0	4.1	4.1	5.4	8.9	8.9	19.8	15.7	30.8	0.825	
CONTROL	1	3	7	2	7	21	18	25	33	29	0.6737	
%	0.6	2.0	4.7	1.3	4.7	14.3	12.3	17.1	22.6	19.8	0.764	
3-5		4	6	5	10	22	22	22	27	35	0.6531	153
%	0.0	2.6	3.9	3.2	6.5	14.3	14.3	14.3	17.6	22.8	0.761	
CONTROL		5	6	5	9	20	22	25	35	26	0.6427	
%	0.0	3.2	3.9	3.2	5.8	13.0	14.3	16.3	22.8	16.9	0.750	
6-10					5	7	7	12	8	23	0.9756	62
%	0.0	0.0	0.0	0.0	8.0	11.2	11.2	19.3	12.9	37.0	0.726	
CONTROL		1	3	1	2	2	8	7	23	15	0.8547	
%	0.0	1.6	4.8	1.6	3.2	3.2	12.9	11.2	37.0	24.1	0.888	
11-15	1			1			4	2	5	8	1.0479	21
%	4.7	0.0	0.0	4.7	0.0	0.0	19.0	9.5	23.8	38.0	0.941	
CONTROL				1		3	3	2	5	7	0.9911	
%	0.0	0.0	0.0	4.7	0.0	14.2	14.2	9.5	23.8	33.3	0.728	
16-20					1	2	4	3	4	2	0.6564	16
%	0.0	0.0	0.0	0.0	6.2	12.5	25.0	18.7	25.0	12.5	0.537	
CONTROL				1		3	1	4	5	2	0.7718	
%	0.0	0.0	0.0	6.2	0.0	18.7	6.2	25.0	31.2	12.5	0.643	
21-30		1		1	1	1			2	3	0.7167	9
%	0.0	11.1	0.0	11.1	11.1	11.1	0.0	0.0	22.2	33.3	1.103	
CONTROL			1	1		1	4	1	1		0.2918	
%	0.0	0.0	11.1	11.1	0.0	11.1	44.4	11.1	11.1	0.0	0.605	
31-50			1	2				1	2	3	0.7153	9
%	0.0	0.0	11.1	22.2	0.0	0.0	0.0	11.1	22.2	33.3	1.075	
CONTROL		1			1		3	1	2	1	0.3395	
%	0.0	11.1	0.0	0.0	11.1	0.0	33.3	11.1	22.2	11.1	0.689	
51-100						2		1		2	0.8506	5
%	0.0	0.0	0.0	0.0	0.0	40.0	0.0	20.0	0.0	40.0	0.850	
CONTROL						1	1		2	1	0.9125	
%	0.0	0.0	0.0	0.0	0.0	20.0	20.0	0.0	40.0	20.0	0.854	
101-					1				1	1	0.7416	3
%	0.0	0.0	0.0	0.0	33.3	0.0	0.0	0.0	33.3	33.3	0.770	
CONTROL					1				2		0.0768	
%	0.0	0.0	0.0	0.0	33.3	0.0	0.0	0.0	66.6	0.0	0.750	
											0.7460	698
											0.780	
											0.6628	
											0.803	

TABLE 21
PERFORMANCE VS. QUANTITY OF DRUG USE WITHIN DURATION CATEGORY

MARIJUANA (ALL) 2 YEARS

TIMES USED	PERFORMANCE DECILES										MEAN/SD	N
	0	1	2	3	4	5	6	7	8	9		
1				1							-0.3750	1
%	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	-	
CONTROL				1							-0.4275	
%	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	-	
2			1			4	5	6	6	14	1.0038	36
%	0.0	0.0	2.7	0.0	0.0	11.1	13.8	16.6	16.6	38.8	0.675	
CONTROL	1	1	2		2	5	2	6	11	6	0.6776	
%	2.7	2.7	5.5	0.0	5.5	13.8	5.5	16.6	30.5	16.6	0.884	
3-5		1	1	4	3	11	10	12	18	27	0.1902	87
%	0.0	1.1	1.1	4.5	3.4	12.6	11.4	13.7	20.6	31.0	0.761	
CONTROL		2	3	3	8	6	5	15	20	25	0.8144	
%	0.0	2.2	3.4	3.4	9.1	6.8	5.7	17.2	22.9	28.7	0.926	
6-10					2	5	11	8	20	14	0.9757	60
%	0.0	0.0	0.0	0.0	3.3	8.3	18.3	13.3	33.3	23.3	0.573	
CONTROL		1	3	1	3	7	5	8	13	19	0.8350	
%	0.0	1.6	5.0	1.6	5.0	11.6	8.3	13.3	21.6	31.6	0.821	
11-15		1		1	1	2	1	7	10	7	0.8879	30
%	0.0	3.3	0.0	3.3	3.3	6.6	3.3	23.3	33.3	23.3	0.675	
CONTROL		1	4	3	2	2	4	1	6	7	0.4921	
%	0.0	3.3	13.3	10.0	6.6	6.6	13.3	3.3	20.0	23.3	0.869	
16-20				3	1	2	2	3	2	7	0.7691	20
%	0.0	0.0	0.0	15.0	5.0	10.0	10.0	15.0	10.0	35.0	0.853	
CONTROL				1	1	3		1	7	7	1.0417	
%	0.0	0.0	0.0	5.0	5.0	15.0	0.0	5.0	35.0	35.0	0.819	
21-30		1		1		2	6	3	7	5	0.7920	25
%	0.0	4.0	0.0	4.0	0.0	8.0	24.0	12.0	28.0	20.0	0.765	
CONTROL		2	1	1		6	3	1	6	5	0.5989	
%	0.0	8.0	4.0	4.0	0.0	24.0	12.0	4.0	24.0	20.0	0.965	
31-50				1		1	1	1	1	8	1.2030	13
%	0.0	0.0	0.0	7.6	0.0	7.6	7.6	7.6	7.6	61.5	0.779	
CONTROL	1	1		1		1	2		2	5	0.4716	
%	7.6	7.6	0.0	7.6	0.0	7.6	15.3	0.0	15.3	38.4	1.203	
51-100		1	1		1	6	2	5	6	10	0.9151	32
%	0.0	3.1	3.1	0.0	3.1	18.7	6.2	15.6	18.7	31.2	0.916	
CONTROL		3		1	5	3	3	4	4	9	0.5657	
%	0.0	9.3	0.0	3.1	15.6	9.3	9.3	12.5	12.5	28.1	0.859	
101-	1	2		2		1	3	3	2	3	0.3770	17
%	5.8	11.7	0.0	11.7	0.0	5.8	17.6	17.6	11.7	17.6	0.982	
CONTROL	2	1	1		2	3	1	1	4	2	0.2711	
%	11.7	5.8	5.8	0.0	11.7	17.6	5.8	5.8	23.5	11.7	1.015	
											0.8765	321
											0.757	
											0.7031	
											0.882	

TABLE 22
PERFORMANCE VS. QUANTITY OF DRUG USE WITHIN DURATION CATEGORY

MARIJUANA (ALL) 3-8 YEARS

BEST COPY AVAILABLE

TIMES USED	PERFORMANCE DECILES											
	0	1	2	3	4	5	6	7	8	9	MEAN/SD	N
2						1		1	5	2	1.1336	9
%	0.0	0.0	0.0	0.0	0.0	11.1	0.0	11.1	55.5	22.2	0.587	
CONTROL					2			4		3	0.8312	
%	0.0	0.0	0.0	0.0	22.2	0.0	0.0	44.4	0.0	33.3	0.711	
3-5				1		1	1	3	3	7	1.1205	16
%	0.0	0.0	0.0	6.2	0.0	6.2	6.2	18.7	18.7	43.7	0.728	
CONTROL		1					3	4	3	5	0.8552	
%	0.0	6.2	0.0	0.0	0.0	0.0	18.7	25.0	18.7	31.2	0.736	
6-10		2		1		4	1	3	4	13	1.0897	28
%	0.0	7.1	0.0	3.5	0.0	14.2	3.5	10.7	14.2	46.4	1.180	
CONTROL		1		1	4	2	3	1	6	10	0.8342	
%	0.0	3.5	0.0	3.5	14.2	7.1	10.7	3.5	21.4	35.7	0.891	
11-15						2	1	2	1	3	0.8850	9
%	0.0	0.0	0.0	0.0	0.0	22.2	11.1	22.2	11.1	33.3	0.670	
CONTROL				1	1	1	2	3		1	0.3734	
%	0.0	0.0	0.0	11.1	11.1	11.1	22.2	33.3	0.0	11.1	0.514	
16-20					1	2	1	2	2	5	1.1072	13
%	0.0	0.0	0.0	0.0	7.6	15.3	7.6	15.3	15.3	38.4	0.969	
CONTROL				2	2		2	2	3	2	0.5659	
%	0.0	0.0	0.0	15.3	15.3	0.0	15.3	15.3	23.0	15.3	0.715	
21-30					1	3	5		4	7	0.9156	20
%	0.0	0.0	0.0	0.0	5.0	15.0	25.0	0.0	20.0	35.0	0.723	
CONTROL			3	1		1	4	2	2	6	0.8987	
%	0.0	0.0	15.0	5.0	0.0	5.0	20.0	10.0	15.0	30.0	0.873	
31-50					1	2		1		7	1.2151	11
%	0.0	0.0	0.0	0.0	9.0	18.1	0.0	9.0	0.0	63.6	0.714	
CONTROL				1		1	2	1	4	2	0.7054	
%	0.0	0.0	0.0	9.0	0.0	9.0	18.1	9.0	36.3	18.1	0.565	
51-100		1		1	1	1	4			9	0.9687	17
%	0.0	5.8	0.0	5.8	5.8	5.8	23.5	0.0	0.0	52.9	1.031	
CONTROL				1		3		3	3	7	1.0308	
%	0.0	0.0	0.0	5.8	0.0	17.6	0.0	17.6	17.6	41.1	0.775	
101-	1	3	1	2	6	10	7	6	11	22	0.8062	69
%	1.4	4.3	1.4	2.8	8.6	14.4	10.1	8.6	15.9	31.8	0.996	
CONTROL	1		4	2	6	8	8	6	17	17	0.7634	
%	1.4	0.0	5.7	2.8	8.6	11.5	11.5	8.6	24.6	24.6	0.885	
											0.9624	192
											0.938	
											0.7662	
											0.812	

TABLE 23
PERFORMANCE VS. QUANTITY OF DRUG USE WITHIN DURATION CATEGORY

AMPHETAMINES

BEST COPY AVAILABLE

1 YEAR

TIMES USED	PERFORMANCE DECILES											
	0	1	2	3	4	5	6	7	8	9	MEAN/SD	N
1			2	1	2	7	3	5	3	15	0.8478	38
%	0.0	0.0	5.2	2.6	5.2	18.4	7.8	13.1	7.8	39.4	0.965	
CONTROL		1		1	6	3	4	6	5	8	0.7209	
%	0.0	2.6	0.0	2.6	15.7	7.8	10.5	15.7	13.6	21.0	0.797	
2-5				1		6	4	1	8	9	0.9164	29
%	0.0	0.0	0.0	3.4	0.0	20.6	13.7	3.4	27.5	31.0	0.793	
CONTROL		2				1	6	6	6	8	0.8481	
%	0.0	6.8	0.0	0.0	0.0	3.4	20.6	20.6	20.6	27.5	0.767	
6-20					1	1	2	3	3	2	0.7274	12
%	0.0	0.0	0.0	0.0	8.3	8.3	16.6	25.0	25.0	16.6	0.499	
CONTROL					2	1			6	3	1.0541	
%	0.0	0.0	0.0	0.0	16.6	8.3	0.0	0.0	50.0	25.0	0.816	
21-						1	1	1	2	1	0.7135	6
%	0.0	0.0	0.0	0.0	0.0	16.6	16.6	16.6	33.3	16.6	0.429	
CONTROL		1				1		1	1	2	0.5301	
%	0.0	16.6	0.0	0.0	0.0	16.6	0.0	16.6	16.6	33.3	0.924	
											0.8618	85
											0.768	
											0.7983	
											0.795	

TABLE 24

PERFORMANCE VS. QUANTITY OF DRUG USE WITHIN DURATION CATEGORY

AMPHETAMINES

BEST COPY AVAILABLE

TIMES USED	PERFORMANCE DECILES												2 YEARS
	0	1	2	3	4	5	6	7	8	9	MEAN/SD	N	
2-5													
∞	0.0	0.0	0.0	0.0	0.0	1	1	1	3	5	1.1162	11	
CONTROL						9.0	9.0	9.0	27.2	45.4	0.573		
♀	0.0	0.0	0.0	0.0	0.0	0.0	4	1	3	3	0.8720		
							36.3	9.0	27.2	27.2	0.493		
6-20		2											
♀	0.0	18.1	0.0	0.0	0.0	0.0	2	2	1	4	0.7762	11	
CONTROL			1		2	1	18.1	18.1	9.0	36.3	1.111		
♀	0.0	0.0	9.0	0.0	18.1	9.0	1	1	2	3	0.7269		
							9.0	9.0	18.1	27.2	0.686		
21-	1												
♀	7.1	0.0	1	0.0	3	1	3		1	4	0.4057	14	
CONTROL			7.1		21.4	7.1	21.4	0.0	7.1	28.5	0.933		
♀	0.0	0.0	1	2	2	5		2		2	0.2130		
			7.1	14.2	14.2	35.7	0.0	14.2	0.0	14.2	0.712		
											0.7574	36	
											0.930		
											0.5714		
											0.754		

TABLE 25
PERFORMANCE VS. QUANTITY OF DRUG USE WITHIN DURATION CATEGORY

AMPHETAMINES

BEST COPY AVAILABLE

3-8 YEARS

TIMES USED	PERFORMANCE DECILES											
	0	1	2	3	4	5	6	7	8	9	MEAN/SD	N
2-5		1							2		0.3541	3
%	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	66.6	0.0	1.426	
CONTROL					1					2	1.2754	
%	0.0	0.0	0.0	0.0	33.3	0.0	0.0	0.0	0.0	66.6	1.220	
6-20						3	1	1		5	0.9787	10
%	0.0	0.0	0.0	0.0	0.0	30.0	10.0	10.0	0.0	50.0	0.846	
CONTROL			2			1	1	1	4	1	0.5594	
%	0.0	0.0	20.0	0.0	0.0	10.0	10.0	10.0	40.0	10.0	0.775	
21-	1				1		1	1		1	0.3078	5
%	20.0	0.0	0.0	0.0	20.0	0.0	20.0	20.0	0.0	20.0	1.575	
CONTROL						1	1		1	2	1.0701	
%	0.0	0.0	0.0	0.0	0.0	20.0	20.0	0.0	20.0	40.0	0.991	
											0.6882	18
											1.119	
											0.8067	
											0.976	

BEST COPY AVAILABLE

TABLE 26
PERFORMANCE VS. QUANTITY OF DRUG USE WITHIN DURATION CATEGORY

BARBITURATES — 1 YEAR

TIMES USED	PERFORMANCE DECILES										MEAN/SD	N
	0	1	2	3	4	5	6	7	8	9		
1	1	1		2	1		2	6	2	9	0.8121	24
%	4.1	4.1	0.0	8.3	4.1	0.0	8.3	25.0	8.3	37.5	1.012	
CONTROL		2	1	1	2	1	4	2	5	6	0.6485	
%	0.0	8.3	4.1	4.1	8.3	4.1	16.6	8.3	20.8	25.0	0.908	
2-		3			2	2	2	3	5	3	0.5438	20
%	0.0	15.0	0.0	0.0	10.0	10.0	10.0	15.0	25.0	15.0	0.949	
CONTROL	1		1	2	2	2	4	1	3	4	0.4192	
%	5.0	0.0	5.0	10.0	10.0	10.0	20.0	5.0	15.0	20.0	0.927	
											0.6902	44
											0.982	
											0.5442	
											0.913	

BEST COPY AVAILABLE

TABLE 27
PERFORMANCE VS. QUANTITY OF DRUG USE WITHIN DURATION CATEGORY

2 YEARS

BARBITURATES

TIMES USED		PERFORMANCE DECILES									MEAN/SD	N
		0	1	2	3	4	5	6	7	8	9		
CONTROL	#	1		1		1			1		1	0.0962	5
	%	20.0	0.0	20.0	0.0	20.0	0.0	0.0	20.0	0.0	20.0	1.327	
	#					1	2		1		1	0.5225	
	%	0.0	0.0	0.0	0.0	20.0	40.0	0.0	20.0	0.0	20.0	0.101	
												0.0962	5
												1.327	
												0.5225	
												0.101	

BEST COPY AVAILABLE

TABLE 28

PERFORMANCE VS. QUANTITY OF DRUG USE WITHIN DURATION CATEGORY

BARBITURATES

3-5 YEARS

TIMES USED	PERFORMANCE DECILES										MEAN/SD	N
	0	1	2	3	4	5	6	7	8	9		
2-		1				3	1	1	1		0.1190	7
CONTROL	0.0	14.2	0.0	0.0	0.0	42.8	14.2	14.2	14.2	0.0	0.0610	
			2		2	1		1		1	0.1309	
	0.0	0.0	28.5	0.0	28.5	14.2	0.0	14.2	0.0	14.2	0.0838	

	0.1190	7
	0.0610	
	0.1309	
	0.0838	

BEST COPY AVAILABLE

TABLE 29
PERFORMANCE VS. QUANTITY OF DRUG USE WITHIN DURATION CATEGORY

HALLUCINOGENS — 1 YEAR

TIMES USED	PERFORMANCE DECILES										MEAN/SD	N
	0	1	2	3	4	5	6	7	8	9		
1	1	1	1	4	5	7	4	12	19	19	0.7995	73
%	1.3	1.3	1.3	5.4	6.8	9.5	5.4	16.4	26.0	26.0	0.802	
CONTROL	1	3	2	1	5	11	8	10	15	17	0.6476	
%	1.3	4.1	2.7	1.3	6.8	15.0	10.9	13.6	20.5	23.2	0.815	
2-5	1		1	2	4	2	6	5	7	12	0.8795	40
%	2.5	0.0	2.5	5.0	10.0	5.0	15.0	12.5	17.5	30.0	0.969	
CONTROL	1	1	1		5	3	6	2	8	13	0.8266	
%	2.5	2.5	2.5	0.0	12.5	7.5	15.0	5.0	20.0	32.5	0.980	
6-20				1		1	4	2	1	5	0.9107	14
%	0.0	0.0	0.0	7.1	0.0	7.1	28.5	14.2	7.1	35.7	0.752	
CONTROL					1	2	1	2	6	2	0.8561	
%	0.0	0.0	0.0	0.0	7.1	14.2	7.1	14.2	42.8	14.2	0.625	
21-				1	1	3		3		3	0.9384	11
%	0.0	0.0	0.0	9.0	9.0	27.2	0.0	27.2	0.0	27.2	0.740	
CONTROL		1			1	4			2	2	0.4949	
%	0.0	9.0	0.0	0.0	9.0	36.3	0.0	0.0	27.2	18.1	0.917	
											0.7988	138
											0.842	
											0.7085	
											0.856	

BEST COPY AVAILABLE

TABLE 30
PERFORMANCE VS. QUANTITY OF DRUG USE WITHIN DURATION CATEGORY

HALLUCINOGENS

2 YEARS

TIMES USED		PERFORMANCE DECILES											
		0	1	2	3	4	5	6	7	8	9	MEAN/SD	N
2-5			1	1			2	1		4	10	1.0344	19
	%	0.0	5.2	5.2	0.0	0.0	10.5	5.2	0.0	21.0	52.6	0.911	
CONTROL						1	4	2	1	5	6	0.9403	
	%	0.0	0.0	0.0	0.0	5.2	21.0	10.5	5.2	26.3	31.5	0.749	
6-20					1		1	1	1	2	5	1.0010	11
	%	0.0	0.0	0.0	9.0	0.0	9.0	9.0	9.0	18.1	45.4	0.736	
CONTROL					1			2	1	3	4	0.9107	
	%	0.0	0.0	0.0	9.0	0.0	0.0	18.1	9.0	27.2	36.3	0.727	
21-		1	1		1	1	3	2	1	3	5	0.6903	19
	%	5.2	5.2	0.0	5.2	5.2	15.7	15.7	5.2	15.7	26.3	1.000	
CONTROL				2	1	3	2	3	1	3	4	0.4849	
	%	0.0	0.0	10.5	5.2	15.7	10.5	15.7	5.2	15.7	21.0	0.708	
												0.8914	49
												0.915	
												0.7605	
												0.752	

BEST COPY AVAILABLE

TABLE 31
PERFORMANCE VS. QUANTITY OF DRUG USE WITHIN DURATION CATEGORY

HALLUCINOGENS

3-P YEARS

TIMES USED	PERFORMANCE DECILES										MEAN/SD	N
	0	1	2	3	4	5	6	7	8	9		
2-5		1			1						-0.0450	2
%	0.0	50.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.590	
CONTROL					1	1					0.0315	
%	0.0	0.0	0.0	0.0	50.0	50.0	0.0	0.0	0.0	0.0	0.132	
6-20					1	2				2	0.7725	5
%	0.0	0.0	0.0	0.0	20.0	40.0	0.0	0.0	0.0	40.0	1.006	
CONTROL			1			1		2	1		0.3432	
%	0.0	0.0	20.0	0.0	0.0	20.0	0.0	40.0	20.0	0.0	0.619	
21-		1			2	3		1		4	0.6842	11
%	0.0	9.0	0.0	0.0	18.1	27.2	0.0	9.0	0.0	36.3	1.094	
CONTROL	1		1	1	1		1	1	3	2	0.4712	
%	9.0	0.0	9.0	9.0	9.0	0.0	9.0	9.0	27.2	18.1	1.060	
											0.5610	18
											1.075	
											0.3868	
											0.879	

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TABLE 32
PERFORMANCE VS. QUANTITY OF DRUG USE WITHIN DURATION CATEGORY

OPIATES — 1 YEAR

TIMES USED	PERFORMANCE DECILES										MEAN/SD	N
	0	1	2	3	4	5	6	7	8	9		
1		1			1	1	1		1	3	0.6125	8
%	0.0	12.5	0.0	0.0	12.5	12.5	12.5	0.0	12.5	37.5	0.889	
CONTROL	1		1		1	1	1	1		2	0.1151	
%	12.5	0.0	12.5	0.0	12.5	12.5	12.5	12.5	0.0	25.0	1.512	
2-		1			1			2	1	1	0.5103	6
%	0.0	16.6	0.0	0.0	16.6	0.0	0.0	33.3	16.6	16.6	0.999	
CONTROL			1			1	1	1	2		0.4261	
%	0.0	0.0	16.6	0.0	0.0	16.6	16.6	16.6	33.3	0.0	0.741	
											0.5687	14
											0.890	
											0.2484	
											1.079	

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TABLE 33
PERFORMANCE VS. QUANTITY OF DRUG USE WITHIN DURATION CATEGORY

OPIATES 2 YEARS

TIMES USED	PERFORMANCE DECILES											
	0	1	2	3	4	5	6	7	8	9	MEAN/SD	N
2-		1				2					-0.2367	3
%	0.0	33.3	0.0	0.0	0.0	66.6	0.0	0.0	0.0	0.0	0.607	
CONTROL							1		1	1	0.9683	
%	0.0	0.0	0.0	0.0	0.0	0.0	33.3	0.0	33.3	33.3	0.490	
											-0.2367	3
											0.607	
											0.9683	
											0.490	

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TABLE 34
PERFORMANCE VS. QUANTITY OF DRUG USE WITHIN DURATION CATEGORY

OPIATES 3-8 YEARS

TIMES USED	PERFORMANCE DECILES										MEAN/SD	N
	0	1	2	3	4	5	6	7	8	9		
2-					1					1	0.7187	2
%	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	50.0	1.193	
CONTROL					1					1	1.1340	
%	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	50.0	1.686	
											0.7187	2
											1.193	
											1.1340	
											1.686	

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TABLE 35
PERFORMANCE VS. QUANTITY OF DRUG USE WITHIN DURATION CATEGORY

OTHER DRUGS — 1 YEAR

TIMES USED		PERFORMANCE DECILES										MEAN/SD	N
		0	1	2	3	4	5	6	7	8	9		
1			1			1	1	1		2	2	0.0104	8
	%	0.0	12.5	0.0	0.0	12.5	12.5	12.5	0.0	25.0	25.0	0.901	
CONTROL				1		1	1	3		2		0.3148	
	%	0.0	0.0	12.5	0.0	12.5	12.5	37.5	0.0	25.0	0.0	0.994	
2-		1				1	1	1			1	0.0196	5
	%	20.0	0.0	0.0	0.0	20.0	20.0	20.0	0.0	0.0	20.0	1.298	
CONTROL				1	1		1	1		1		0.0775	
	%	0.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	0.0	0.766	
												0.3831	13
												1.061	
												0.2235	
												0.645	

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TABLE 36
PERFORMANCE VS. QUANTITY OF DRUG USE WITHIN DURATION CATEGORY

2 YEARS

OTHER DRUGS

TIMES USED		PERFORMANCE DECILES										MEAN/SD	N
		0	1	2	3	4	5	6	7	8	9		
2-							1		1			0.4662	2
	%	0.0	0.0	0.0	0.0	0.0	50.0	0.0	50.0	0.0	0.0	0.574	
												0.1698	
CONTROL					1				1			0.822	
	%	0.0	0.0	0.0	50.0	0.0	0.0	0.0	50.0	0.0	0.0		

	0.4662	2
	0.574	
	0.1698	
	0.822	

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TABLE 37
PERFORMANCE VS. QUANTITY OF DRUG USE WITHIN DURATION CATEGORY

OTHER DRUGS

1-5 YEARS

TIMES USED	PERFORMANCE DECILES										MEAN/SD	N
	0	1	2	3	4	5	6	7	8	9		
2-5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 100.0	0.0	0.8750 -	1
CONTROL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 100.0	0.0	0.0	0.6875 -	
											0.8750 -	1
											0.6875 -	

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TABLE 38
PERFORMANCE VS. QUANTITY OF DRUG USE WITHIN DURATION CATEGORY

MARIJUANA (ONLY) 1 YEAR

TIMES USED	PERFORMANCE DECILES											
	0	1	2	3	4	5	6	7	8	9	MEAN/SD	N
1	1	3	10	11	11	24	42	39	59	53	0.7044	254
%	0.3	1.1	3.9	4.3	4.3	9.4	16.4	15.3	23.2	20.8	0.732	
CONTROL	5	4	7	18	28	27	26	39	53	47	0.6112	
%	1.9	1.5	2.7	7.0	11.0	10.6	10.2	15.3	20.8	18.5	0.869	
2		3	5	6	8	12	12	26	21	43	0.7968	136
%	0.0	2.2	3.6	4.4	5.8	8.8	8.8	19.1	15.4	31.6	0.830	
CONTROL	1	3	7	2	6	19	17	24	31	26	0.6599	
%	0.7	2.2	5.1	1.4	4.4	13.9	12.5	17.6	22.7	19.1	0.762	
3-5		3	4	5	9	20	21	20	22	31	0.8620	135
%	0.0	2.2	2.9	3.7	6.6	14.8	15.5	14.8	16.2	22.9	0.758	
CONTROL		4	6	5	6	16	20	22	34	24	0.6603	
%	0.0	2.9	4.4	3.7	4.4	11.8	14.8	16.2	25.7	17.7	0.735	
6-10					3	7	7	11	6	15	0.8068	49
%	0.0	0.0	0.0	0.0	6.1	14.2	14.2	22.4	12.2	30.6	0.839	
CONTROL		1		1	2	2	5	6	16	11	0.7653	
%	0.0	2.0	4.0	2.0	4.0	4.0	10.2	12.2	32.6	22.4	0.650	
11-15				1			3	2	2	7	1.2397	15
%	0.0	0.0	0.0	6.6	0.0	0.0	20.0	13.3	13.3	46.6	0.473	
CONTROL					3	3	2	2	3	5	0.9975	
%	0.0	0.0	0.0	0.0	0.0	20.0	13.3	13.3	20.0	33.3	0.883	
16-20					1	2	3	3	3	2	0.8473	14
%	0.0	0.0	0.0	0.0	7.1	14.2	21.4	21.4	21.4	14.2	0.540	
CONTROL				1		2	1	4	4	2	0.7953	
%	0.0	0.0	0.0	7.1	0.0	14.2	7.1	28.5	28.5	14.2	0.648	
21-30		1		1	1	1			2	1	0.3320	7
%	0.0	14.2	0.0	14.2	14.2	14.2	0.0	0.0	28.5	14.2	0.987	
CONTROL			1	1		1	2	1	1		0.2507	
%	0.0	0.0	14.2	14.2	0.0	14.2	28.5	14.2	14.2	0.0	0.695	
31-50			1	1					2	2	0.8209	6
%	0.0	0.0	16.6	16.6	0.0	0.0	0.0	0.0	33.3	33.3	1.245	
CONTROL		1			1		2	1		1	0.2458	
%	0.0	16.6	0.0	0.0	16.6	0.0	33.3	16.6	0.0	16.6	0.794	
51-100										1	1.6750	1
%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	-	
CONTROL										1	1.6250	
%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	-	
											0.7410	617
											0.786	
											0.6559	
											0.798	

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TABLE 39
PERFORMANCE VS. QUANTITY OF DRUG USE WITHIN DURATION CATEGORY

MARIJUANA (ONLY) 2 YEARS

TIMES USED	PERFORMANCE DECILES										MEAN/SD	N
	0	1	2	3	4	5	6	7	8	9		
1				1							-0.3750	1
%	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	-	
CONTROL				1							-0.4375	
%	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	-	
2			1			3	5	5	5	14	1.0451	33
%	0.0	0.0	3.0	0.0	0.0	9.0	15.1	15.1	15.1	42.4	0.682	
CONTROL	1	1	2		1	4	2	5	11	6	0.7218	
%	3.0	3.0	6.0	0.0	3.0	12.1	6.0	15.1	33.3	18.1	0.907	
3-5		1	1	4	3	10	10	10	16	22	0.8461	77
%	0.0	1.2	1.2	5.1	3.8	12.9	12.9	12.9	20.7	28.5	0.758	
CONTROL		2	3	3	7	6	5	12	17	22	0.7738	
%	0.0	2.5	3.8	3.8	9.0	7.7	6.4	15.5	22.0	28.5	0.817	
6-10					1	4	8	5	14	11	0.9444	43
%	0.0	0.0	0.0	0.0	2.3	9.3	18.6	11.6	32.5	25.5	0.591	
CONTROL		1	3	1	1	3	4	4	11	15	0.9190	
%	0.0	2.3	6.9	2.3	2.3	6.9	9.3	9.3	25.5	34.8	0.880	
11-15		1		1	1	2	1	5	6	2	0.6468	19
%	0.0	5.2	0.0	5.2	5.2	10.5	5.2	26.3	31.5	10.5	0.711	
CONTROL		1	4	2	1	1	1	1	4	4	0.3635	
%	0.0	5.2	21.0	10.5	5.2	5.2	5.2	5.2	21.0	21.0	0.941	
16-20				2	1	1	2	2	1	5	0.7614	14
%	0.0	0.0	0.0	14.2	7.1	7.1	14.2	14.2	7.1	35.7	0.875	
CONTROL				1	1	3		1	4	4	0.9433	
%	0.0	0.0	0.0	7.1	7.1	21.4	0.0	7.1	28.5	28.5	0.891	
21-30						1	4	2	4	4	1.0025	15
%	0.0	0.0	0.0	0.0	0.0	6.6	26.6	13.3	26.6	26.6	0.698	
CONTROL		1		1		3	2	1	3	4	0.6701	
%	0.0	6.6	0.0	6.6	0.0	20.0	13.3	6.6	20.0	26.6	0.800	
31-50								1		4	1.6075	5
%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	80.0	0.691	
CONTROL	1			1		1				2	-0.0046	
%	20.0	0.0	0.0	20.0	0.0	20.0	0.0	0.0	0.0	40.0	1.635	
51-100		1				2	2		2	4	0.9812	12
%	0.0	8.3	0.0	0.0	0.0	16.6	16.6	0.0	25.0	33.3	1.047	
CONTROL				1	2		1	2	2	4	0.7893	
%	0.0	0.0	0.0	8.3	16.6	0.0	8.3	16.6	16.6	33.3	0.787	
101-		1		1			1	1			-0.0468	4
%	0.0	25.0	0.0	25.0	0.0	0.0	25.0	25.0	0.0	0.0	0.715	
CONTROL	1		1						1	1	0.1607	
%	25.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	25.0	25.0	1.256	
											0.8856	223
											0.750	
											0.7297	
											0.198	

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TABLE 40

PERFORMANCE VS. QUANTITY OF DRUG USE WITHIN DURATION CATEGORY

MARIJUANA (ONLY)

TIMES USED	PERFORMANCE DECILES											3-8 YEARS
	0	1	2	3	4	5	6	7	8	9	MEAN/SD	N
2												
#	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	5	2	1.2514	
CONTROL								12.5	62.5	25.0	0.500	8
%	0.0	0.0	0.0	0.0	2	0.0	0.0	3	0.0	3	0.8492	
3-5					25.0			37.5		37.5	0.757	
#	0.0	0.0	0.0	0.0	0.0	1	1	3	3	7	1.2160	
CONTROL		1				6.6	6.6	20.0	20.0	46.6	0.642	15
%	0.0	6.6	0.0	0.0	0.0	0.0	3	3	3	5	0.8662	
6-10							20.0	20.0	20.0	33.3	0.760	
#	0.0	1	0.0	0.0	0.0	4	1	2	4	11	1.1630	
CONTROL		4.3				17.3	4.3	8.6	17.3	47.8	1.119	23
%	0.0	1	0.0	1	4	2	2	1	5	7	0.7337	
11-15		4.3		4.3	17.3	8.6	8.6	4.3	21.7	30.4	0.923	
#	0.0	0.0	0.0	0.0	0.0	1	1	2		2	0.9005	
CONTROL						16.6	16.6	33.3	0.0	33.3	0.759	6
%	0.0	0.0	0.0	1	1		1	2		1	0.4039	
16-20				16.6	16.6	0.0	16.6	33.3	0.0	16.6	0.617	
#	0.0	0.0	0.0	0.0	0.0	2		1	2	3	1.1457	
CONTROL						25.0	0.0	12.5	25.0	37.5	0.955	8
%	0.0	0.0	0.0	2	0.0	0.0	1	1	3	1	0.0129	
21-30				25.0			12.5	12.5	37.5	12.5	0.719	
#	0.0	0.0	0.0	0.0	0.0	1	2		2	3	1.0895	
CONTROL						12.5	25.0	0.0	25.0	37.5	0.766	8
%	0.0	0.0	2	1	0.0	0.0	1	1	1	2	0.4374	
31-50			25.0	12.5			12.5	12.5	12.5	25.0	0.469	
#	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	0.0	4	1.5183	
CONTROL								20.0		80.0	0.938	5
%	0.0	0.0	0.0	0.0	0.0	0.0	1	0.0	3	1	0.9257	
51-100							20.0		60.0	20.0	0.409	
#	0.0	1	0.0	1	0.0	0.0	2	0.0	0.0	3	0.7645	
CONTROL		14.2		14.2			28.5			42.8	1.330	7
%	0.0	0.0	0.0	1	0.0	3	0.0	1	0.0	2	0.6537	
101-				14.2		42.8		14.2		28.5	0.488	
#	0.0	1	1	0.0	0.0	0.0	0.0	1	4	7	1.1678	
CONTROL		7.1	7.1					7.1	28.5	50.0	0.985	14
%	0.0	0.0	0.0	0.0	0.0	2	1	2	5	4	1.1940	
						14.2	7.1	14.2	35.7	28.5	0.786	
											1.1514	64
											0.898	
											0.7810	
											0.519	

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TABLE 41
PERFORMANCE VS. NUMBER OF DIFFERENT DRUGS USED

NUMBER OF DRUGS USED		PERFORMANCE DECILES										MEAN/SD	N
		0	1	2	3	4	5	6	7	8	9		
1		1	18	23	36	39	99	130	144	191	265	0.8148	946
	%	0.1	1.9	2.4	3.8	4.1	10.5	13.7	15.2	20.2	28.0	0.786	
	CONTROL	9	23	38	46	63	99	103	141	214	210	0.6860	
	%	1.0	2.4	4.0	4.9	6.7	10.5	10.9	14.9	22.6	22.2	0.827	
2		2	4	4	8	10	20	15	25	35	56	0.8309	179
	%	1.1	2.2	2.2	4.5	5.6	11.2	8.4	14.0	19.6	31.3	0.854	
	CONTROL	3	5	3	4	12	22	20	23	45	42	0.7271	
	%	1.7	2.8	1.7	2.2	6.7	12.3	11.2	12.8	25.1	23.5	0.819	
3			1		2	5	9	8	8	8	24	0.8929	65
	%	0.0	1.5	0.0	3.1	7.7	13.8	12.3	12.3	12.3	36.9	0.824	
	CONTROL	1	2	1		7	6	10	5	17	16	0.7433	
	%	1.5	3.1	1.5	0.0	10.8	9.2	15.4	7.7	26.2	24.6	0.868	
4		2	3	1		1	4	3	4	4	7	0.4425	29
	%	6.9	10.3	3.4	0.0	3.4	13.8	10.3	13.8	13.8	24.1	1.060	
	CONTROL			2	1	5	4	3	4	3	7	0.5937	
	%	0.0	0.0	6.9	3.4	17.2	13.8	10.3	13.8	10.3	24.1	0.791	
5						2	1	1		1		0.2539	5
	%	0.0	0.0	0.0	0.0	40.0	20.0	20.0	0.0	20.0	0.0	0.549	
	CONTROL			2	1		1			1		-0.1933	
	%	0.0	0.0	40.0	20.0	0.0	20.0	0.0	0.0	20.0	0.0	0.783	
9										1		1.8125	1
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	-	
	CONTROL						1					0.3853	
	%	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	-	
												0.8110	1225
												0.807	
												0.6890	
												0.828	

TABLE 42

INTERCORRELATION MATRIX FILE INDICES

1. Z-Score, High School General Mental Ability Test
2. Z-Score, Airman Qualifying Examination General Aptitude Index
3. Age in Years
4. Number of times marijuana was used
5. Number of years marijuana was used
6. Frequency of marijuana use (Item 4/Item 5)
7. Number of times amphetamines were used
8. Number of years amphetamines were used
9. Frequency of amphetamine use (Item 7/Item 8)
10. Number of times barbiturates were used
11. Number of years barbiturates were used
12. Frequency of barbiturate use (Item 10/Item 11)
13. Number of times hallucinogens were used
14. Number of years hallucinogens were used
15. Frequency of hallucinogen use (Item 13/Item 14)
16. Number of times opiates were used
17. Number of years opiates were used
18. Frequency of opiate use (Item 16/Item 17)
19. Number of times other drugs were used
20. Number of years other drugs were used
21. Frequency of other drug use (Item 19/Item 20)
22. Number of times marijuana was used (no other drugs)
23. Number of years marijuana was used (no other drugs)
24. Frequency of marijuana use (Item 22/Item 23)

TABLE 42

INTERCORRELATION MATRIX FILE INDICES

(cont.)

25. Years before enlistment subject started drug use

26. Duration of drug use

27. Change in mental ability (Item 2 minus Item 1)

28. Change in mental ability((control's high school Z-Score) minus Item 1)

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TABLE 43
DRUG USE VS. HIGH SCHOOL Z-SCORE

	TIMES USED	YEARS USED	FREQUENCY
MARIJUANA (ALL) N=1217			
SLOPE	-0.00013	0.08056	-0.00048
INTERCEPT	0.91540	0.67398	0.81718
CORR. COEFF.	-0.03335	0.10140	-0.03457
AMPHETAMINES N=139			
SLOPE	-0.00014	-0.11625	-0.00029
INTERCEPT	0.82218	1.00219	0.82303
CORR. COEFF.	-0.10829	-0.14827	-0.10861
BARBITURATES N=56			
SLOPE	-0.00012	-0.25221	-0.00024
INTERCEPT	0.58025	0.91260	0.58054
CORR. COEFF.	-0.10692	-0.20353	-0.10586
HALLUCINOGENS N=206			
SLOPE	-0.00286	-0.00745	-0.00495
INTERCEPT	0.84089	0.81035	0.84099
CORR. COEFF.	-0.10311	-0.00682	-0.11254
OPIATES N=19			
SLOPE	-0.00277	0.00541	-0.00686
INTERCEPT	0.54570	0.44966	0.57963
CORR. COEFF.	-0.24002	0.00510	-0.31445
OTHER DRUGS N=16			
SLOPE	-0.00318	0.17905	-0.00679
INTERCEPT	0.44800	0.19299	0.46900
CORR. COEFF.	-0.07252	0.10673	-0.13041
MARIJUANA (ONLY) N=939			
SLOPE	0.00005	0.17197	-0.00093
INTERCEPT	0.80973	0.55436	0.81619
CORR. COEFF.	0.00383	0.17743	-0.01927

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TABLE 44
DRUG USE VS. AQE GAI Z-SCORE

	TIMES USED	YEARS USED	FREQUENCY
MARIJUANA (ALL) N=3662			
SLOPE	-0.00019	-0.01858	-0.00073
INTERCEPT	0.39668	0.42014	0.40000
CORR. COEFF.	-0.06586	-0.03537	-0.06901
AMPHETAMINES N=586			
SLOPE	-0.00009	-0.05144	-0.00015
INTERCEPT	0.28122	0.35832	0.27963
CORR. COEFF.	-0.06689	-0.09865	-0.04708
BARBITURATES N=227			
SLOPE	-0.00004	-0.07207	-0.00006
INTERCEPT	0.24028	0.35489	0.23922
CORR. COEFF.	-0.04140	-0.16620	-0.02584
HALLUCINOGENS N=745			
SLOPE	-0.00055	-0.07418	-0.00199
INTERCEPT	0.31603	0.41958	0.32373
CORR. COEFF.	-0.09678	-0.12536	-0.09952
OPIATES N=149			
SLOPE	-0.00008	-0.02125	-0.00027
INTERCEPT	0.13270	0.15796	0.13531
CORR. COEFF.	-0.11298	-0.07224	-0.12117
OTHER DRUGS N=67			
SLOPE	-0.00055	-0.06155	-0.00112
INTERCEPT	0.15429	0.22870	0.15505
CORR. COEFF.	-0.13106	-0.14003	-0.12720
MARIJUANA (ONLY) N=2593			
SLOPE	-0.00014	0.03243	-0.00064
INTERCEPT	0.42718	0.37629	0.42942
CORR. COEFF.	-0.01648	0.04713	-0.02331

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TABLE 45

DRUG USE VS. CHANGE IN GENERAL MENTAL ABILITY

DIFFERENCE BETWEEN AGE GEN. APT. INDEX CONVERTED TO Z-SCORE AND H. S. Z-SCORE

	TIMES USED	YEARS USED	FREQUENCY
MARIJUANA (ALL) N=1217			
SLOPE	-0.00004	-0.04409	-0.00012
INTERCEPT	0.14958	0.22226	0.14971
CORR. COEFF.	-0.01342	-0.06973	-0.01171
AMPHETAMINES N=139			
SLOPE	0.00004	0.00901	0.00008
INTERCEPT	0.11238	0.10048	0.11225
CORR. COEFF.	0.03986	0.01466	0.04121
BARBITURATES N=56			
SLOPE	0.00004	0.08824	0.00009
INTERCEPT	0.15851	0.04199	0.15779
CORR. COEFF.	0.06237	0.11009	0.06209
HALLUCINOGENS N=206			
SLOPE	-0.00060	-0.08629	0.00069
INTERCEPT	0.10962	0.22701	0.09514
CORR. COEFF.	-0.02870	-0.10458	0.02056
OPIATES N=19			
SLOPE	0.00196	0.19646	0.00439
INTERCEPT	0.20751	-0.00915	0.19177
CORR. COEFF.	0.19696	0.21434	0.23319
OTHER DRUGS N=16			
SLOPE	-0.00032	-0.33694	0.00219
INTERCEPT	0.13779	0.95583	0.11782
CORR. COEFF.	-0.01098	-0.30063	0.06239
MARIJUANA (ONLY) N=959			
SLOPE	-0.00016	-0.07374	0.00013
INTERCEPT	0.15040	0.26803	0.15748
CORR. COEFF.	-0.01537	-0.04492	0.00340

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TABLE 46

DRUG USE VS. CHANGE IN GENERAL MENTAL ABILITY
HIGH SCHOOL Z-SCORES - CONTROL MINUS USER

	TIMES USED	YEARS USED	FREQUENCY
MARIJUANA (ALL) N=1211			
SLOPE	0.00005	-0.03879	0.00010
INTERCEPT	-0.12717	-0.05950	-0.12656
CORR. COEFF.	0.01092	-0.04356	0.00704
AMPHETAMINES N=139			
SLOPE	0.00003	0.07077	0.00007
INTERCEPT	-0.07378	-0.18724	-0.07425
CORR. COEFF.	0.02584	0.08989	0.02538
BARBITURATES N=56			
SLOPE	0.00004	0.10285	0.00009
INTERCEPT	-0.07993	-0.21654	-0.08064
CORR. COEFF.	0.05252	0.11173	0.05332
HALLUCINOGENS N=205			
SLOPE	-0.00059	-0.03793	0.00015
INTERCEPT	-0.09870	-0.05170	-0.10855
CORR. COEFF.	-0.02016	-0.03267	0.00334
OPIATES N=19			
SLOPE	0.00483	0.47946	0.00998
INTERCEPT	-0.15606	-0.58235	-0.17990
CORR. COEFF.	0.31097	0.34389	0.34826
OTHER DRUGS N=16			
SLOPE	0.00478	-0.03310	0.00622
INTERCEPT	-0.21801	-0.12973	-0.21892
CORR. COEFF.	0.11799	-0.02135	0.12914
MARIJUANA (ONLY) N=934			
SLOPE	-0.00010	-0.10791	-0.00003
INTERCEPT	-0.12933	0.03028	-0.13047
CORR. COEFF.	-0.00690	-0.09693	-0.00063

6. References

"Buros 3" followed by an entry number shall be taken to refer to the specified entry in:
Buros, O. K., The Third Mental Measurements Yearbook, Rutgers University Press, New Brunswick, N.J., 1949.

"Buros 4" followed by an entry number shall be taken to refer to the specified entry in:
Buros, O. K., The Fourth Mental Measurements Yearbook, Gryphon Press, Highland Park, N.J., 1953.

"Buros 5" followed by an entry number shall be taken to refer to the specified entry in:
Buros, O. K., The Fifth Mental Measurements Yearbook, Gryphon Press, Highland Park, N.J., 1959.

"Buros 6" followed by an entry number shall be taken to refer to the specified entry in:
Buros, O. K., The Sixth Mental Measurements Yearbook, Gryphon Press, Highland Park, N.J., 1961.

1. Cove, Philip B., (ed). Webster's Third New International Dictionary of the English Language (Unabridged). G. & C. Merriam Co., Springfield, Mass., 1966, P. 2302.
2. Stevens, C. C., Interim Report (Drug Abusers), Contract F41609-72-C-0035. Personnel Research Division, Air Force Human Resources Laboratory, Lackland AFB, Texas, 1973.
3. Abramowitz, M. and Stegun, I. A., (eds). Handbook of Mathematical Functions, National Bureau of Standards Applied Mathematics Series (55), Washington, D. C., 1964, P. 976.

4. Buros 6, 1.
5. Buros 6, 18.
6. Buros 6, 17.
7. Buros 6, 449.
8. Buros 6, 760.
9. Buros 5, 314.
10. Buros 5, 342 and Buros 4, 299.
11. Buros 5, 22.
12. Buros 6, 466.
13. Buros 5, 349.
14. Buros 5, 350.
15. Buros 6, 22.
16. Buros 3, 255.
17. Buros 4, 716.
18. Buros 6, 536.
19. Buros 6, 496 states that this test is an outgrowth of the SRA PMA; with the Contract Monitor's permission we have assumed that a publisher would make every attempt to maintain comparability between his various tests.
20. Thorndike, R. L. and Hagen, E., Measurements and Evaluation in Psychology and Education, 3rd ed., John Wiley & Sons, New York, 1969. P. 304.
21. Buros 5, 416.
22. Dr. Cecil J. Mullins, Ph.D., Personal Communication. Since only a small portion of the scores converted from IQ format had standard deviations other than 16, the Contract Monitor approved the assumption that all IQ scores whose test names were not given had a standard deviation of 16.

APPENDIX

MAGNETIC TAPE DATA FILE FORMATS

The two (2) magnetic tape data files were provided to the Air Force on a single reel of heavy-duty Mylar magnetic recording tape, 1/2" wide by 2400' long, certified for 3200 flux changes per inch (Scotch 777GP), at a density of 556 BPI even parity in Binary Coded Decimal (BCD), without tape labels.

The first file is a version of the master file used in the course of the project. It contains all information on each subject both provided by the Government and obtained by the contractor. The records are 234 characters long (29 six-character words) and are unblocked. There are 10,514 records in this file; it is terminated by a tape mark.

The second file contains the intercorrelation matrix. There are 1,513 unblocked records on this file. Each record contains all calculated information on a pair of variables. The records are 258 characters (33 six-character words) long; the file is terminated by a tape mark.

MASTER RECORD FILE FORMAT

FIELD NO.	START CHAR.	END CHAR.	WIDTH	IDENTIFICATION
1	1	2	2	Permanent Grade
2	3	5	3	Grade (for labels)
3	6	6	1	Blank
4	7	15	9	SSAN
5	16	42	27	Name
6	43	46	4	Duty Location Code
7	47	50	4	UAR Date (YYMM)
8	51	79	29	Duty Address (First Line)
9	80	110	31	Duty Address (Second Line)
10	111	112	2	AQE General Aptitude Index
11	113	114	2	Age at Enlistment
12	115	117	2	Date of Enlistment (YR)
13	117	118	2	Date of Enlistment (MO)
14	119	120	2	Date of Enlistment (DA)
15	121	124	4	Home of Record Code
16	125	125	1	Education Level
17	126	129	4	Sequence Number (High Order Four Digits) See Note 1
18	130	130	1	Sequence Number (Low Order Digit) See Note 1
19	131	134	4	Total Number of Times Marijuana was Used
20	135	136	2	Total Number of Years Marijuana was Used

MASTER RECORD FILE FORMAT, CONT'D

FIELD NO.	START CHAR.	END CHAR.	WIDTH	IDENTIFICATION
21	137	140	4	Total Number of Times Amphetamines were Used
22	141	142	2	Total Number of Years Amphetamines were Used
23	143	146	4	Total Number of Times Barbiturates were Used
24	147	148	2	Total Number of Years Barbiturates were Used
25	149	152	4	Total Number of Times Hallucinogens were Used
26	153	154	2	Total Number of Years Hallucinogens were Used
27	155	158	4	Total Number of Times Opiates were Used
28	159	160	2	Total Number of Years Opiates were Used
29	161	164	4	Total Number of Times Other Drugs were Used
30	165	166	2	Total Number of Years Other Drugs were Used
31	167	170	4	Total Number of Times Marijuana Only was Used
32	171	172	2	Total Number of Years Marijuana Only was Used
33	173	173	1	Number of Different Drugs Used
34	174	175	2	Number of Years Before Enlistment Subject Started Drug Use

MASTER RECORD FILE FORMAT, CONT'D

FIELD NO.	START CHAR.	END CHAR.	WIDTH	IDENTIFICATION
35	176	177	2	Number of Years Subject Used Drugs
36	178	186	9	Name of Test Code (See Table 1 of Report
37	187	187	1	"V" if Score is for Verbal Portion of Test Only
38	188	193	6	Date of Test, DDMMYY
39	194	197	4	Score (See Note 2)
40	198	200	3	Units in which Score is Reported
41	201	208	8	Z-Score Conversion of Field 39 (Note 3)
42	209	216	8	Z-Score Conversion of Field 10 (Note 3)
43	217	221	5	Sequence Number (See Note 1)
44	222	222	1	Match Code (Notes 1 and 4)
45	223	224	2	Blank
46	225	232	8	Date of Birth (e.g., 14 MAR 44)
47	233	233	1	New Match Code (Notes 1 and 4)
48	234	234	1	Response Code (Note 5)

INTERCORRELATION MATRIX FILE FORMAT

FIELD NO.	START POS.	END POS.	WIDTH	DESCRIPTION
1	1	1	1	"0" if all available drug users were included, "1" if only those with acceptable scores for both user and control were included.
2	2	3	2	X-variable Index (See Table 42 of Report)
3	4	4	1	Same as Field 1
4	5	6	2	Y-variable Index
5	7	24	18	Integer number of users in sample (right-justified blank filled)

See Note 6 for a description of the formats of the following fields:

6	25	42	18	Sum of X (Note 7)
7	43	60	18	Sum of X^2 (Note 7)
8	61	78	18	Sum of Y (Note 7)
9	79	96	18	Sum of Y^2 (Note 7)
10	97	114	18	Sum of XY (Note 7)
11	115	132	18	Mean of X (Note 8)
12	133	150	18	Standard Deviation of X (Note 9)
13	151	168	18	Mean of Y (Note 8)
14	169	186	18	Standard Deviation of Y (Note 9)

INTERCORRELATION MATRIX FILE FORMAT

(cont.)

FIELD NO.	START POS.	END POS.	WIDTH	DESCRIPTION
15	187	204	18	Slope of Fitted Line (Note 10)
16	205	222	18	Intercept of Fitted Line (Note 10)
17	223	240	18	Correlation Coefficient (Note 11)
18	241	258	18	Standard Deviation of Y about Line (Note 12)

Fields 11-18 contain blanks if field 5 contains zero.

Note 1: Fields 17 and 18 ordinarily contain the information supplied by the Air Force on the subject. It was extracted from Fields 17 and 18 of the Air Force tape for the drug users, and from Fields 53-54 or 73-74 for the controls, as appropriate. Field 43 always contains this information; likewise, Field 47 ordinarily contains the information supplied by the Air Force in Field 55 or Field 75 for control subjects; Field 44 always does. The exceptions for Fields 17, 18 and 47 occur when the subject has been rematched by the contractor. In this case, Field 17 contains an alphanumeric sequence number; the first position is always "C" and the remainder are always numeric. Field 18 is a zero for all users, "1" or "2" for controls. Field 47 indicates the accuracy of the match (Note 4). In most cases, then, Fields 17-18 contain the same information as Field 43 and Field 47 contains the same information as Field 44.

Note 2: Three (3) digits with leading zeroes followed by a blank if Field 40 does not contain "PCB"; else, two groups of two (2) digits "XXYY" to indicate a score in the form "XX-YY percentile band".

Note 3: Format of these Fields is sign (minus or blank), digit, decimal point, five (5) digits; e.g., -1.24759; 0.21847

Note 4: The match code is always blank for the drug users. For the control subjects, the codes are:

	Parameters matched
4	AQE, Age, Year of Enlistment, Home of Record
3	AQE, Age, Year of Enlistment
2	AQE, Age
1	AQE, Age (user) vs. Age + 1 (control)

Note 5: Response codes are as follows:

Blank	No response from subject
1	Permission granted, school d'd not respond
2	Permission granted, transcript received, scores coded but found meaningless or unconvertible
3	Form did not reach subject (bad address)
4	Permission granted, transcript received, no valid score
5	Subject discharged from service
8	Permission granted, transcript received, scores coded and converted
9	Permission denied

Note 6: The format of these variables may be most concisely described from the low-order position of the Field. This, from the right end, we have five (5) digits, decimal point, at lease one but not more than eleven (11) digits, sign (minus or blank), blanks to make eighteen (18) positions. For example, -12345678901.23456, -23.45678 and 0.00000 are all valid. The decimal point appears in the thirteenth (13) position in all cases.

Note 7: Sum of X is defined as $\sum_{i=1}^{N} X_i$ (and denoted "sX" below) where N is the value specified in Field 5 and X_i is the variable indexed in Field 2;

Sum of X^2 is denoted "sXX" and defined as $\sum_{i=1}^{N} (X_i)^2$;

Sum of Y is denoted "sY" and defined as $\sum_{i=1}^{N} Y_i$, where Y_i is the variable indexed in Field 4;

Sum of Y^2 is denoted "sYY" and defined as $\sum_{i=1}^{N} (Y_i)^2$ and

Sum of XY is denoted "sXY" and defined as $\sum_{i=1}^{N} (X_i \cdot Y_i)$.

Note 8: Mean of X is denoted "$\bar{X}$" and defined as sX/N.

Mean of Y is denoted "$\bar{Y}$" and defined as sY/N.

Note 9: Standard deviation of X is defined as $((sXX - N \cdot (\bar{X})^2) / (N-1))^{1/2}$ and of Y as $((sYY - N \cdot (\bar{Y})^2) / (N - 1))^{1/2}$

Note 10: Slope of fitted line (denoted "slope") is defined as:

$(N \cdot sXY - sX \cdot sY) / (N \cdot sXX - (sX)^2)$;

intercept (denoted "int") is defined as (sY - slope · sX) / N.

Note 11: Correlation coefficient is defined as :

$(N \cdot sXY - sX \cdot sY) / (N \cdot sXX - (sX)^2) \cdot (N \cdot sYY - (sY)^2))^{1/2}$

Note 12: Standard deviation of Y about line is defined as:

$(\frac{1}{N} \cdot (\sum_{i=1}^{N} (Y_i - \text{slope} \cdot X_i - \text{int})^2))^{1/2}$